# GAS JOURNAL

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## THE NORTH BRITISH ASSOCIATION

AS is reported in later pages of this issue, the 87th Annual General Meeting of the North British Association took place last week in Aberdeen. As always, it was a great success; and that success is due not only to the ability and hard work of the men who from year to year conduct the affairs of the Association, but to the cohesion and *esprit de corps* which bind the members and provide the atmosphere which regularly attracts a large number of distinguished guests and privileged visitors. The Association last met in Aberdeen in 1930, under the Presidency of Mr. David Fulton; before that, in 1912, when the late Mr. Samuel Milne, father of the now-retiring President, was in the Chair. It was at the 1912 meeting that Dr. H. G. Colman delivered the inaugural William Young Lecture, choosing "Carbonization" as his subject. In 1930, the late Sir Arthur Duckham, under the banner of "*Assidue Exquirendo Servire,*" dealt on broader lines with the technical development of the gas industry. At last week's meeting there was no William Young lecture, but an address by Sir Harold West, Managing Director of Messrs. Newton Chambers & Co., Ltd. Thereon we hang a comment.

Sir Harold's subject was industrial co-operation and what they have done at Thorncliffe to reconcile the views of management and men and to breed in young men and women a realization that there is something more in a job of work than an interesting routine for the present and an implied and supplied security for the future. But it was not only the importance and interest of the subject that kept a large audience engrossed and alert; it was equally the personality of the speaker and the fact that he spoke as a lecturer, with not more than an occasional glance at notes, in clear contrast to the modern method of reading rapidly and monotonously from a printed paper. True, we did our level best to extract from Sir Harold West the text of his "paper"; he resolutely refused—he was not reading a paper, but delivering an address. And so that silent and appreciative (albeit non-smoking) audience, and the genuinely spontaneous round of applause which preceded the votes of thanks. Such practice does not perhaps lend itself to the presentation of technical papers; but when practicable it provides a very pleasant break from the humdrum.

These thoughts lead us back to the meeting of the Institution of Gas Engineers. We realize that hitherto there has been only one general meeting a year and that many are worthy to claim the distinction of presenting a paper before the technical synod of the industry; but can anyone agree that the modern method of consummation is satisfactory to author, audience or—shall we be so bold as to say—to the Technical Press? First, the author hurrying, almost diffidently, through an introduction so brief as to deny its name; then the V.I.P.'s reading their contributions at the correct speed to fit the time allotted, and mercifully casting their typescript upon the Press table, where skilled reporters await the chance to show their paces at 200 words a minute; then one or two speakers from the floor of the house, an omnibus invitation for written contributions, and there's the next author toeing the line with his introduction. It is a method rather conducive of a chilly atmosphere and a sense of frustration. Perhaps the Institution would try the experiment, with one paper of general interest, of cutting the introduction and the read and written contributions to the discussion, leaving it to individual members to catch the operator's eye and have their say. For our part we can promise to reproduce faithfully what they say, and somehow we feel that our columns would be none the less interesting for the return to good old-fashioned practice.

## THE COOKING LOAD

THREE hundred and fifty housewives have supplied to Mr. A. W. Farquhar their experience of cooking by gas over a period of nearly 20 years. This experience is, taken as a whole, an extraordinarily good testimonial to the manfacturers of gas cookers in this country and it focuses attention on the value of the cooking load to the gas industry and at the same time, on the need for keeping this fact uppermost in mind. British gas cookers, used intelligently—and it does not require over-much intelligence to operate them effectively—give singularly little trouble and cost next to nothing in maintenance—again a tribute to the knowledge and skill of the manufacturer in producing a serviceable article. Mr. Farquhar, relating the results of his cooker survey, in which the housewives co-operated with interest and enthusiasm, gave a figure for maintenance over a 10-year period of 7s. 6d. a cooker—less than 1s. a year for a modern appliance. This aspect of negligible maintenance cost is a strong point in favour of gas when alternative schemes are mooted. We have, in fact, as a result of the service given, a substantial hold of the public's favour in regard to gas cooking; but, as in many other directions, we cannot afford to rest either on past or present laurels, and designers and manufacturers must have constantly under review what the public wants. Therein, we think, lies the purport of the paper given on Thursday last at Aberdeen to the North British Association of Gas Managers. The paper is published in our issue to-day.

Analysis of the results of the survey to which we have referred showed without ambiguity that, in order of merit, the housewife wants a cooker to be of good appearance, to be speedy in operation, to be easy to clean. Burner efficiency comes last for consideration in the buying of a modern gas cooker. Definitely the housewives whose opinions were freely given asked for speed of operation—a point of controversy among appliance manufacturers and the suppliers of gas alike. It is significant that safety in working was taken for granted and that automatic control is regarded as part and parcel of gas cooking. It is also extremely interesting to learn that in Mr. Farquhar's area the installation of a modern high-grade cooker in place of an older type resulted in an increase, not a decrease, in gas consumption. In other words the modern cooker, proving more attractive, was used in

greater degree and obviously to better advantage. Retention of the cooking load will depend on the most effective compromise based on the practical possibilities of the appliance manufacturer, the viewpoint of the gas undertaking, and the requirements of the user; and in the ultimate the last in the list will not be the least important. Mr. Farquhar's paper, in which are compressed many minor points (such, for example, as the design of taps) which, however, loom large on the housewife's horizon, is a pointer to our contention. It is altogether satisfactory that steps are being taken to ascertain with at any rate some degree of accuracy what the user of gas appliances wants of these appliances. Mere ascertainment of these requirements should, of course, be regarded as a preliminary towards their satisfaction within practical and economic limits.

## PSYCHOLOGY AND OUTPUT

ATTEMPTS to persuade the working man that he is truly a partner in industry are symptomatic of the greatest problem in industry. We know that given more machines and more power (neither of which may be procured without a licence and immense trouble—if there is enough steel and equipment available) production can be stepped up to the American level. The real difficulty is to persuade people to use what is provided for them. It has been pointed out by others that the introduction of machinery into the pits does not lead to anything like a proportional increase in production; the machine seems to be used simply to create more leisure, not to create more goods. It was not so in the nineteenth century, and we prospered. It is so in the twentieth century, and we do not prosper.

The latest development is the use of psychology. Industry, the psychologists complain, seeks help from universities in its technical problems, but not to any great extent in handling human relationships. One group of "social scientists," we are told, has been offering advice and guidance in this direction for the past two years. Its methods have been illustrated in a recent article as follows, using the procedure applied to children as an example: "Some difficulty in the behaviour of the child leads to a consultation with a child psychiatrist. He unravels the complex features of the patient's emotional instability. His colleague, the educational psychologist, looks into the child's intellectual attainments and scholastic attainments. The social worker may visit the home, interview the parents, consult the school teacher. Bodily disorders may have to be investigated and put right. A general scheme to help the child is gradually put together, which has to be carried out by the child's parents and others around him." And so on. One may sigh for the days gone by when a kick in the pants put matters to rights in five minutes.

This method is applied to grown-ups. "Some 'disorder of a group' may arise in a factory. Output is falling, the accident and sickness rates are rising, dissatisfaction and frustration are clearly present. Investigation by a team is called for. The client—that is, the patient as represented by the management—goes to the 'clinic.' Older methods of dismissal or a general tightening up of rigid discipline—comparable with the old methods of treating the mentally afflicted—are giving place of more scientific investigation and collaborative 'treatment.' The 'emotional outlook' of the individuals in the group will bear examination. The industrial psychologists may need to study the details of the working programme. The social worker will need to learn something of the pattern of society in miniature inside the factory. Gradually a plan is worked out for dealing with the social and psychological aberrations revealed." All this sounds very fine and scientific, but what is the ultimate cure for the nation? Is it the old-fashioned remedy? When the country faces unemployment and a lower standard of living, will all these modern neuroses vanish? Shall we get down to work again?

However, we cannot be satisfied to accept this drastic solution to present ills if we can forestall them. There has been in many places a lack of consideration for the human factor, even if modern psychology seems to be going too far in the other direction. The huge concerns—and the nationalized industries will, of course, be among them—have largely removed the personal touch which meant so much. One way of restoring that touch in a large organization through workers' representatives and works' committees has been described. Means must be found to remove suspicion where it exists as between management and labour, and undoubtedly the works' committee, properly handled, is among the best of these. There is and we hope will always remain a decent core of reliable men in every undertaking or constructional firm, men who are proud of their record of service and who deprecate settling differences by a trial of strength; men who do an honest day's work for a fair day's pay. They will be the leaven that should leaven the whole. The selection of men for management is unquestionably important. Something more than driving force is needed. The knack of handling men, of getting on with other people, may well be more important in a manager or a foreman than high technical attainments.

A writer has lately described his ideal executive: "The qualifications called for are a sound knowledge of the business, a diplomatic and tactful attitude towards subordinates and seniors alike, a sound scientific approach to all problems, an open mind, and tons of plain unbiassed common-sense, all of which should be coupled with a good education." Maybe this century will in time breed the perfect executive and in sufficient numbers; and that may be the solution of how to get men to work hard for a big corporation when the personal touch has faded.

## *THE COAL BOARD'S PROFIT*

The National Coal Board's quarterly statement of accounts is a more encouraging document at first sight than close examination will allow. While the Board has in the quarter just ended managed to make a profit estimated at about £1 mill., it has only been able to do this against rising costs of production by charging more for the 3,925,525 tons of coal it sold overseas in the quarter. At present it is able to do this for high quality coal because the demand from Europe is so great but to continue with this policy on a long-term basis would be neither the best way to build up a sound coal industry for this country itself nor to regain Britain's pre-war position as the world's greatest exporter of coal.

Before the war, for example, Britain was able to export coal even to a large producer such as Germany because it was cheaper to ship the coal across the North Sea than it was to transport it by land from the Ruhr to the German manufacturing ports. Increased costs of the coal from Britain will turn buyers of British coal to other and cheaper markets when the supply position has improved. Home consumers, too, need cheaper coal, otherwise increased costs will be transmitted to finished products and serve to harden the export market against British goods. The main fact is that out of four items of production costs listed in notes issued with the report, three show increases and only one, the smallest, a decrease. Wages have been the biggest cause of the increase, meaning an extra charge of 3.6d. on every ton produced compared with the first quarter of the year. The saving, of 1.5d. per ton, comes from a decrease in the coal and power consumed.

## *BENZOLE RECOVERY*

The gas industry, as is its wont, co-operated to good purpose during the 1939-45 war in pooling resources at Government behest. The addition of national benzole to the common petroleum pool was a specific instance of good service. Benzole is a versatile product in wartime; equally it is versatile in peacetime. No doubt during the present happy peace it has helped in the lift of food and other provisions to those in Berlin. Benzole has a first-class payload value; we doubt whether, even in 1948, its influence on the overall economy of the carbonization process is being evaluated with discretion. After the 1914-18 experience of the national worth of benzole and its homologues, benzole recovery plants were allowed far too much opportunity to rust. Fortunately there were those with prescience

to retain benzole in its rightful place on the national map. We refer, of course, to the efforts of the National Benzole Company and the National Benzole Association. We hope now that, with the long-retarded dissolution of the petrol pool's more rigid regulations, we shall see a recovery of branded "National Benzole." The merits of benzole demand more than the generic term of pool spirit, and we feel that it would be a political miscalculation if benzole recovery was not actively encouraged. It is a short-term policy to burn benzole, toluol, and xylene at the gas consumer's burner, whether or not that consumer wants a cup of tea or a motor car for export. The benzole marketing organization, with all its peacetime and wartime experience, exists not merely to enhance gas industry prestige as a flexible coal processing industry but to lend weight to national recovery.

# Personal

At the meeting of the Grand Council of the Federation of British Industries last week, Sir ROBERT SINCLAIR, K.C.B., K.B.E., was appointed Deputy President of the Federation.

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Mr. L. M. WELDON, Distribution Superintendent of the Hartlepool Gas and Water Company, is retiring at the end of September, after 51½ years' service. He has been Hon. Secretary of the Auxiliary Section of the North of England Gas Managers' Association for 16 years, and for the present is continuing to hold this office. A past Chairman of the Auxiliary Section, he served for many years on the Northern District Education Committee. He is also a past Chairman of the Northern Association of Gas Salesmen.

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Following the winding up of the Electricity Commissioners the following appointments have been made to the Engineering Department of the Electricity Division of the Ministry of Fuel and Power, at Cromwell House, Dean Stanley Street, Millbank: Mr. A. N. EAST, Chief Engineering Inspector; Mr. H. W. GRIMMITT, Deputy Chief Engineering Inspector; Mr. A. H. LINTON, Engineering Inspector; Mr. S. HOWARTH, Chief Meter Examiner. Mr. A. E. MARSON, M.B.E., and certain other members of the former staff of the Electricity Commission have also been appointed to the Electricity Division.

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Mr. H. J. PATCHING, Engineer and Deputy Manager of Peterborough Gas Company, leaves at the end of the year to take up an appointment in Uruguay as Works Engineer of the Montevideo Gas and Dry Dock Company. He has been with the Peterborough undertaking for 11 years, coming as an Assistant Engineer and being appointed Deputy Manager four years ago. Formerly he worked at Deal and Loughborough. His departure will mean relinquishing the Presidency of the Eastern Junior Gas Association. Mr. Patching is a member of the Peterborough cricket and hockey clubs. He will be accompanied to Montevideo by his wife and twin daughters.

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A personal notice in the current *G.W.F.* regretfully records the departure from Germany, for England, of Mr. H. D. GREENWOOD, who was Director of the Gas Division of the British Military Government and later Director of the Public Branch of the Bizonal Control Office in Frankfurt/Main. His knowledge of the German gas industry and his goodwill in solving its problems have been appreciated. In the same issue appears a synopsis of Mr. Greenwood's paper "Restoration and Control of the Gas Industry in the British Zone of Germany," which was presented to the Institution of Gas Engineers last year. Mr. Greenwood was the second speaker at the recent annual meeting of the German Association of Gas and Water Engineers, when he made useful suggestions concerning the future development of the German gas industry. Mr. Greenwood was recently entertained by leading members of the German gas industry. Presentations were made by Dr. Roelen, General Director of Thyssensche Gas- und Wasserwerke, and Dr. Schuster, Business Manager of Deutscher Verein von Gas- und Wasserfachmannern, and it was announced that Mr. Greenwood had been elected a life member of the latter association. Mr. Greenwood has been appointed Assistant Director, Carbonization and Briquetting Branch, of the National Coal Board.

## DE LA RUE GAS DEVELOPMENT, LTD.

Following the recent reorganization of De La Rue Gas Development Limited, the Directors state that the Company will proceed with the development and manufacture of all its products, including De La Rue multipoint gas water heaters, infra-red drying equipment, "Perfector" gas Thermostats, gas cookers and gas grillers.

Mr. Leopold Friedman has ceased to be a Director of De La Rue Gas Development, Ltd., and Thomas Potterton (Heating Engineers) Limited, but will retain his seat on the Board of Thomas De La Rue and Company, Limited.

# Diary

Sept. 20.—**London and Counties Coke Association**: Gas Industry House, Finance Committee, 11 a.m.; Executive Committee, 11.30 a.m.; Central Committee, 1.30 p.m.

Sept. 22-23.—**Wales and Monmouthshire Association of Gas Engineers and Managers**: Newport. Sept. 22, Golf competition, bowling competition. Sept. 23, Meeting, Assembly Room, Town Hall, Civic welcome. "Specifications, Planning, Laying, and Testing of Gas Mains with particular reference to High Pressure Mains," E. M. Edwards, M.Inst.Gas E., A.M.I.Mech.E., Engineer and Manager, Port Talbot Gas Department; "Some Thoughts on Promotional Tariffs for the Small Undertaking," K. E. Tiddy, M.Inst.Gas E., Engineer and Manager, Carmarthen Gas Company. Official luncheon, 1 p.m. Tour of Pontypool Gas-works, 2.15 p.m.

Sept. 22-23.—**Institute of Statutory Inspectors of Gas Meters**: Annual Conference, Edinburgh, preceded by a Civic Reception.

Sept. 24.—**North of England Gas Managers Association** (Auxiliary Section): Meeting at Sunderland and visit to Messrs. Alex. Pirie & Sons, Ltd.

Sept. 24.—**Institute of Fuel (Scottish Section)**: Annual General Meeting followed by D. M. Yuill, of Messrs. Wolsey, Ltd., on "Heat Conservation in a Dyeing and Finishing Works," 39, Elmbank Crescent, Glasgow, 6 p.m.

Nov. 24-25.—**Institution of Gas Engineers**: 14th Autumn Research Meeting, London.

Sept. 27.—**Women's Gas Council**: Executive Committee, Gas Industry House, 1 p.m.

Sept. 28-30.—**Society of Chemical Industry**: Conference on Dust in Industry, University of Leeds.

Sept. 29.—**Institution of Heating and Ventilating Engineers**: "Research for the Heating, Ventilating and Air Conditioning Engineer," Cyril Tasker, M.I.H.V.E., Director of Research, American Society of Heating and Ventilating Engineers, at the Institution of Mechanical Engineers, Storey's Gate, S.W.1, 6 p.m.

Sept. 30.—**National Smoke Abatement Society**: Annual Conference. And on Oct. 1.

Sept. 30.—**Severn Valley Gas Corporation Salesmen's Circle**: Visit to Ascot Gas Water Heaters, Ltd., Neasden.

Oct. 1.—**North of England Gas Managers Association**: Autumn General Meeting, Stockton-on-Tees. Presidential Address by F. L. Scaife. Visit to works of Ashmore, Benson, Pease & Co., Ltd.

Oct. 2.—**Scottish Junior Gas Association, Eastern District**: Opening Meeting, Falkirk. Presidential Address: W. Brown.

Oct. 5.—**Midland Junior Gas Association**: Opening Meeting. Presidential Address, C. L. Evans, Birmingham, 6.30 p.m.

Oct. 5.—**Wales and Monmouthshire Junior Gas Association**: Opening Meeting, Newport (Mon.). Presidential Address: M. A. H. Dyer. Visit to Factory and Area.

Oct. 8.—**Scottish Junior Gas Association (Western District)**: Presidential Address, L. Bain (Greenock), Glasgow.

Oct. 9.—**Manchester and District Junior Association of Gas Engineers**: Presidential Address, H. N. Dann (Blackburn); visit to Blackburn Corporation Gas Department, or to Messrs. Philips (Blackburn), Ltd.

Oct. 18.—**London and Counties Coke Association**: Annual Luncheon, 1 p.m. for 1.15 p.m.; Annual General Meeting, 2.45 p.m. Grosvenor House, Park Lane, W.1.

Oct. 19.—**Southern Association of Gas Engineers and Managers (Eastern District)**: Opening meeting, "The Future of Coke Marketing," J. O. Cooke, B.Sc., M.I.Mech.E., A.M.I.E.E., M.I.F., General Manager, London and Counties Coke Association, Gas Industry House, 2.30 p.m. Committee meeting, 11 a.m.

Oct. 21.—**Midland Junior Gas Association**: Visit to Ascot Gas Water Heaters, Ltd., Neasden.

Oct. 21.—**Midland Association of Gas Engineers and Managers**: General Meeting, Queen's Hotel, New Street, Birmingham, 2.30 p.m.

**The Grand Council** of the Federation of British Industries has had under consideration the recent statement of the Chancellor of the Exchequer on productivity. The President, Sir Frederick Bain, has reported discussions which he has had with Sir Stafford Cripps on this question, in the course of which he expressed the opinion that this matter should be handled, each in their own spheres, by employers and trade unions working along parallel lines. The Grand Council endorsed the action taken by the President and decided to appoint at once a Production Committee to advise what further steps the Federation should take. At the same time they recorded their view that success would be inevitably limited, so long as present restrictions on capital expenditure were maintained. Even within the limits prescribed by the balance of payments problems, industry could not safely be left much longer as the residuary legatee, whose claims for capital expenditure are the last to be met.

*Mr. H. S. Milne*

# NORTH BRITISH ASSOCIATION OF GAS MANAGERS' ANNUAL MEETING

## "ENCOURAGED TO GO FORWARD WITH RESPECT FOR THE PAST AND CONFIDENCE IN THE FUTURE"—PRESIDENT

THE Eighty-Seventh Annual General Meeting of the North British Association of Gas Managers was held on Sept. 9, in Cowdray Hall, Aberdeen, the President, Mr. Harold S. Milne, B.Sc.(Eng.), M.Inst.GasE., A.M.I.C.E., Engineer and Manager, Aberdeen Gas Department, presiding over a large attendance.

Welcoming the members, the President said that since last they met much had happened, the full implication of which to the gas industry they did not yet know. The Gas Bill had received the Royal Assent and was now an Act and it might well be that this was the last occasion on which their annual meeting would take its customary form. Their daily work in providing an efficient service to the public made heavy demands on them, but such gatherings refreshed and encouraged them to go forward with respect for the past and confidence in the future.

Mr. **Duncan Fraser,** Lord Provost of Aberdeen, welcomed the members to the "silver city by the sea." The Association was 87 years old and he was surprised to find that this was only their third visit to the city. Aberdeen was an early user of gas and no city had a better undertaking. He hoped that their Conference would be pleasant and profitable and that they would be able to iron out any problems with good humour and tolerance, qualities in which the world to-day was lacking.

Returning thanks for the welcome, the President said he was himself an Aberdonian and it would not be becoming for him publicly to recite the many merits of the Granite City. He asked the Lord Provost to convey to the Magistrates and Councillors their sincere thanks for the welcome extended to them.

The President said that since last they met Mr. James Bell, formerly Engineer and Manager at Dumbarton Gas Department, had died. He was well known and popular, having become an ordinary member in 1909 and being appointed a life member on his retiral in 1940.

### Chartered a Plane

The President said they were fortunate in having with them Mr. E. Crowther, President of the Institution of Gas Engineers. It was literally a flying visit, as Mr. Crowther had chartered a 'plane so that he might spend a few hours in Aberdeen before leaving for Switzerland to represent the Institution at the meetings of the Swiss Gas Association.

Mr. **Crowther** said he brought with him the cordial greetings of the Council of the Institution. The North British Association stood high amongst gas organisations and it was only by maintaining and strengthening the contacts between the associations that they could hope to maintain that spirit which in the past had done so much for the gas industry.

The Council of the Institution was considered how these contacts could be strengthened. Many of them were able to attend their own conferences but found it difficult, if not impossible, to attend that all too infrequent general meetings of the Institution. This was a matter for concern and the Council would do everything possible to strengthen the link between individual members and Institution. It might be possible to issue regular reports of their activities and they wanted the North British Association members to feel that they were part and parcel of these activities.

On the subject of the Institution's Building Fund, Mr. Crowther said they would get all the money they needed, but they wanted 100% support from the members. It was important that the members should express their confidence by becoming subscribers. In that way they could show they had confidence in the future of the Institution. In view of all the jokes made about Aberdeen he considered he could have chosen no better place for making this appeal!

Mr. **R. Kelf-Cohen,** Permanent Under Secretary to the Ministry of Fuel and Power, said he was glad to be present representing the Department with which they all had to live and which they all had to suffer. He appreciated the extraordinary trouble his Department had caused them and it was perhaps because Scotland had known how to put up with them that they had not found it so imperative to come North. The Ministry had been exceptionally fortunate in having Mr. James Campbell as its Scottish representative. They had always felt in London that if any trouble developed in Scotland Mr. Campbell could deal with it, and it was really due to him that nobody from the Ministry had come to their meetings. They had been busy in many ways, some of them perhaps not desirable from the gas manager's point of view. Considering the size of the country and the greatness of its gas industry, Scotland had given his department very little trouble.

The situation at the moment was that the Ministry would soon be making appointments to the Area Boards and it would then be the responsibility of these Boards to get to work and organize the areas under their charge. They would all agree that the right thing to do was to put all Scotland under one Board. It was a land of both great and small undertakings. Distances were great and the organizing of gas supplies would be a great task. Nobody had the slightest doubt but that the Gas Board would find in Scotland as keen and capable and loyal a body of engineers as anywhere in the British Isles. In addition, the reorganization and development of the industry would provide opportunities for which many of them had been waiting.

### Education Committee's Report

Following the approval of the minutes of the last Annual General Meeting and of the spring meeting at Perth, the adoption of the Council's Annual Report was moved by Mr. **D. Fulton,** (Helensburgh) who offered a suggestion that members should read with care the report of the Education Committee. The results of the examination in the last two years had been indifferent. It was hard to believe that the fault lay with the students. It lay largely in the kind of training given to the young men in the gas-works. The percentage of failures was much too large and there were too many second-class certificates. It should be a matter of conscience for all of them to give opportunities for systematic training in gas production and management. This was important because of the new scheme leading to membership of the Institution. The road would be harder and the young men would need all the help they could get. They all had duties and responsibilities in the matter and these were concerned with the future welfare of the industry.

### Presentation of Certificates

The President presented gas engineering certificates to Messrs. Alexander Walker (Motherwell); James M. Walker (Dundee); Peter Oliver (Hawick); and Alan Briggs (Helensburgh).

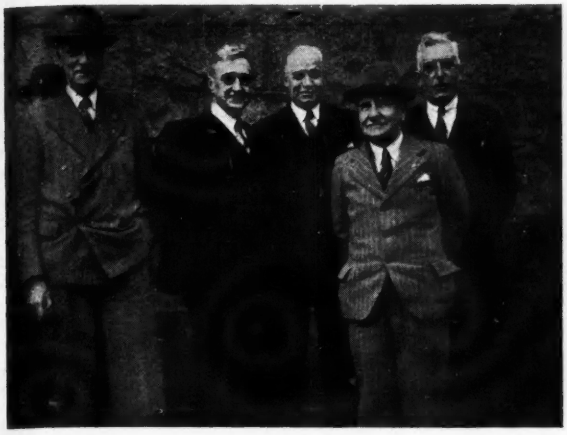
He said it was to be regretted that no candidate had reached a sufficiently high standard to receive the Council's award.

Introducing Sir Harold West, Managing Director of Newton Chambers and Co., Ltd., Thorncliffe, the President said that the name of his firm was familiar to all in the gas industry in Scotland. At Thorncliffe there had been built up what was probably the finest example in the country of an industrial training and welfare organization.

Sir Harold gave an address on "The Thorncliffe Experiment in Industrial Co-operation," which will appear in the next issue of the "GAS JOURNAL."

The President reported that Mr. D. D. Melvin (Edinburgh) would succeed him in the Chair, Mr. F. R. Mitchell (Lanarkshire County Council) had been elected Junior Vice-President, and Mr. E. G. Smith (Dunfermline) had been elected to fill a vacancy on the Council. For the second vacancy there had been an equality of votes between Messrs. A. Farquhar (Forfar) and R. L. Laing (Brechin), and both their names would therefore go into the hat.

The draw resulted in Mr. Farquhar being declared elected.



*Messrs. H. G. Ritchie, G. Rushton (Buckie), W. Pitt (Banff), Lewis Bain (Cullen), Tom Mackie (Keith).*

Leaving his office, the President said that Mr. Melvin received his early training in the West and was Engineer and Manager at Uddingston before being appointed Deputy Engineer at Edinburgh. Early last year he had become Engineer and Manager, and it was fitting that the engineer of that undertaking, which had never failed to give a lead to the industry in Scotland, should be their President during the coming momentous year.

Thereafter Mr. Melvin was installed with the chain of office and took the chair, thanking the members for the honour conferred on him and assuring them of his desire to emulate his predecessors and maintain the standard they had set.

Mr. **James M. Dow** (Paisley) then presented to Mr. Milne a memento of his year of office, and said that he had brought lustre to the chair and proved himself a most capable chairman.

Acknowledging the presentation, Mr. Milne paid tribute to the help he had received from the Council and Secretary.

## President's Luncheon

The President was the host at the luncheon which followed, held in the Royal Hotel.

Proposing the toast of "The Guests," Mr. Milne said this luncheon, which had for long formed an integral part of our annual meeting, afforded an opportunity to the President and Council of the North British Association of Gas Managers to acknowledge in a measure their indebtedness to some of those who, in various ways, have contributed to the success of their meetings.

The Lord Provost, and the Town Council of this City had shown a most kindly interest in the meetings of this Association, and had seen to it that their members and their ladies had been most hospitably received. For his own part, he most sincerely appreciated this consideration and interest, without which it would have been impossible to undertake the presidential duties.

It was a great pleasure to have Mr. Crowther, the President of the Institution of Gas Engineers, in their company. Perhaps they were inclined to take it for granted that the President of the Institution would be present, and fail to appreciate the very great effort which he must make in order to represent the Institution at the meetings of kindred institutions and associations.

Councillor **Brechin,** Convener of the Gas Committee, was a good friend of the North British Association, and had been most anxious to ensure that our meetings this year should be successful. Of Councillor Brechin's interest in the gas industry and in the Aberdeen undertaking particularly, there was no doubt. With him the welfare of the undertaking took precedence over personal or sectional considerations.

By the presence of Mr. Kelf-Cohen, the official responsible for the Gas Division of the Ministry of Fuel and Power, they were reminded of the altering circumstances of the industry. They welcomed the opportunity of meeting Mr. Kelf-Cohen as no doubt he also welcomed the chance of learning at first hand of how things were in Scotland. He understood that Mr. Kelf-Cohen had just completed an extended tour in Scotland during which he made a detailed study of the roads. He did not think that he was carrying out a preliminary survey for a national grid for the Highlands where he, himself, had done comparatively little cycling. However, from what he knew of the roads of Wester Ross, he fancied that he would have been considerably impressed.

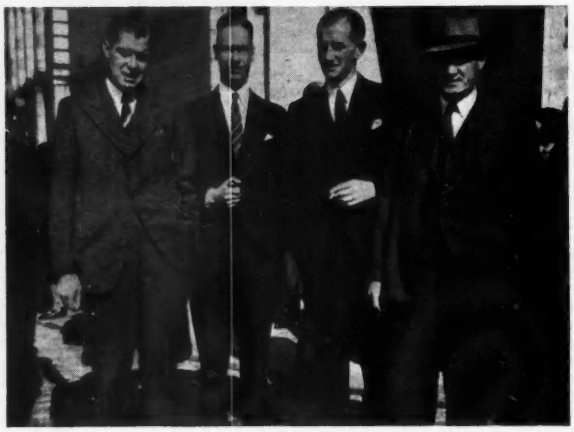
Much as he would like to refer individually to every guest in turn, time would not permit. Mr. Fulton, the tireless Chairman of the British Gas Council in Scotland, was well known and appreciated by them all. There was also Mr. Hector Hughes, one of their local Members of Parliament, two senior officials of the Corporation, the Town Clerk and City Chamberlain, the readers of papers, members of his staff, and others who, in one way or another, have assisted in the arrangements for the meeting.

The reply to the toast was given by Bailie Mrs. **Baxter,** who explained that Lord Provost Duncan Fraser, for whom she was deputising, had been commanded to Braemar, where their Majesties were attending the Highland Gathering.

## A Virile Association

Proposing "The North British Association," Mr. **E. Crowther,** President of the Institution of Gas Engineers, regretted that his engagements did not permit him to stay and see more of Aberdeen. Last year he had visited the North British Association meeting as a deputy for Dr. Hartley and on that occasion he had tried to express the warm regard felt for the Association by the Institution and members of the industry in England. They admired the North British Association for the happy atmosphere it created and for its activities on behalf of the industry. The proceedings that forenoon had reached a high level and showed there was no abatement in their virility. He looked to them for a continuance of that spirit which had done so much in the past. They were all concerned to see that the industry went from strength to strength and their selection, as their new President, of his friend and colleague, Mr. Melvin, was a guarantee that they would continue in the future as they had done in the past. They had been encouraged to learn that the Minister of Fuel and Power meant to avail himself of the services of the Institution in the discharge of these technical responsibilities falling to him under the new Act. He regarded the Institution and its work as essential to the progress of the industry. Similarly the Institution looked to the district associations for a constant flow of new ideas and inspiration. Their welfare was tied together and one could not flourish without the other. At the moment preliminary discussions were going on to strengthen the link between the Institution and the associations for the benefit of both and he hoped soon to see the culmination of the work whereby district associations would become branches of the Institution, sharing in the confidence reposed in the latter by the Minister. A closer link would allow the individual member to participate more in the work of the Institution. It was sometimes difficult for a member to take an active part in the proceedings of the Institution, but their well being and friendship were as important as those of the people on the doorstep of the offices in London. If they could promote that closer liaison between district associations and the Institution it would leave the latter free to attend, at its too infrequent general meetings, to matters of wide importance, the practical work and discussions being left to district meetings. It was the intention of the Institution Council to prepare memoranda for the Minister and the Gas Council showing the direction in which it felt itself competent to give technical assistance. An important thing to tackle was education. He hoped to see included in the memoranda the work of the district and junior bodies; this was post-graduate work which had to be maintained at all costs. Area Boards had to look after welfare, and that should include the work of the associations. There was no reason why welfare should stop at the level of the weekly paid man. The welfare of the engineer depended largely on contacts made at association meetings, and he hoped the Area Boards would accept that view. He hoped that in the memoranda the new controllers of their Industry would be told of the work and value of the professional men in it. Association platforms were

*Mr. S. Langford (Robt. Dempsters, Ltd.) chats with Mr. R. Kelf-Cohen, Ministry of Fuel and Power Permanent Under-Secretary for Gas.*



*Messrs. A. McFadyen (Dumbarton), J. Fulton (Haddington), E. G. Smith (Dunfermline), and A. R. Anderson (Alexandria) pause for the photographer.*

the only ones on which executives could express opinions on the art and practice of the Industry. This was most important, and he would therefore ask them to preserve the traditions of their 87 years old association.

Replying, Mr. **D. D. Melvin** (Edinburgh) said that while the North British could not claim to be the oldest of the gas associations, it was not far from it, and could still claim precedence, at least in age, over the Institution. It was first mooted in January, 1862, and formed at a meeting in that year as the Fife, Kinross, Perth and Forfar Association of Gas Managers. Later, by mergers of the Scottish Association of Gas Managers in 1866, and the West of Scotland Association of Gas Managers in 1883, the North British began a more extended career of usefulness.

It was interesting to record that one of the reasons put forward for the formation of the West of Scotland Gas Managers' Association was the fear that the North British of these days was about to be merged in the British Association, the forerunner of the Institution, and that there would be no Association left to cater for the managers of small works. The backbone of their membership had been the Engineers and Managers of small undertakings. Some were excluded from membership of the Institution, and some may have felt that it would be too ambitious for them to aspire to membership. The recently mooted proposal for a closer liaison between the Institution and the District Associations was under discussion, and this point would be kept in mind. No suggestion had been made, however, to restrict this source of recruitment, and Mr. Melvin felt certain that a middle way would be found.

The criticism following the last Institution meeting on the lack of time and opportunity for discussion of the papers presented was a pointer to a way in which something useful could be done. "The subjects of the papers presented last June were such that each and all of us felt the desire to discuss them further or to ask for more information, and what better platforms could be offered for that than those of the district associations? Much of the information freely given is often allowed to pass from mind without application, and I feel certain this would not be so if the papers were also presented to us for discussion."

The N.B., like the Institution, had kept aloof from questions of salary, grading, and so forth, and rightly so. The North British Association had enough to do if it dealt with technical matters, training and education, and, in the words of Article I of the Constitution, "promotes the advancement of the gas industry in any or all of its branches."

## SPORTING EVENTS

### Golf

The meeting of the Golf Circle, which was largely attended, took place in glorious weather on the Murcar course. The results were as follows:

Winner of Challenge Bowl and Captain's Prize: W. C. Hogg (Kelty) 94 – 18 = 76.

Section I (Handicaps up to 12): 1. J. Brock (Glasgow) 79 – 1 = 78; 2. R. Stewart (Thurso) 79 – 1 = 78; 3. R. L. Laing (Brechin) 86 – 7 = 79.

Section II (Handicaps 13 and over): 1. W. C. Hogg (Kelty) 94 – 18 = 76; 2. L. Fletcher (Glasgow) 103 – 20 = 83; 3. W. N. Baird (Perth) 102 – 18 = 84.

In the visitors' competition first prize was won by Mr. F. Hailstones (93 – 15 = 78); for the second prize Mr. T. Scott, jun. (89 – 10 = 79) tied with Mr. L. Fletcher, jun. (83 – 4 = 79).

The annual general meeting was held in the clubhouse after play with Mr. Sam Hall, retiring captain, in the chair. Before business, Mr. Hall introduced Mrs. Harold Milne, who had graciously consented to present the prizes. Thereafter the minutes, arising from which the captain pointed out that total membership of the Circle had risen from 84 to 88.

Mr. Alex. Jamieson, of Johnstone, was unanimously elected Captain for 1948-49, and Mr. Lewis Fletcher, sen. (Glasgow) as Vice-Captain. Mr. W. F. Ross (Glasgow) was elected to the Committee; and Mr. W. P. Rae, warmly thanked for past services, was re-elected Hon. Secretary and Treasurer. Auditors were appointed for the first time; Mr. David Fulton (Helensburgh) and Mr. H. A. Aitken (Leven) being appointed for one year.

The meeting closed with the customary votes of thanks and circulation of the Challenge Bowl by the winner, Mr. Wm. Hogg, of Kelty.

### Bowling

Meanwhile the Bowling Competition was in full swing on the Carlton Place green of the Aberdeen Bowling Club. This meeting was as popular as ever, 48 players taking part.

During the afternoon Mrs. Harold Milne entertained the ladies to afternoon tea. Lady Provost Fraser presented the replicas to Past Presidents of the Bowling Club, and Mrs. Harold Milne presented the Bowling Trophy and prizes to the winners of the afternoon's competition:

Winners (20 shots up): 1. G. McNair; 2. L. Steel; 3. J. Brown; 4. J. Young (skip).

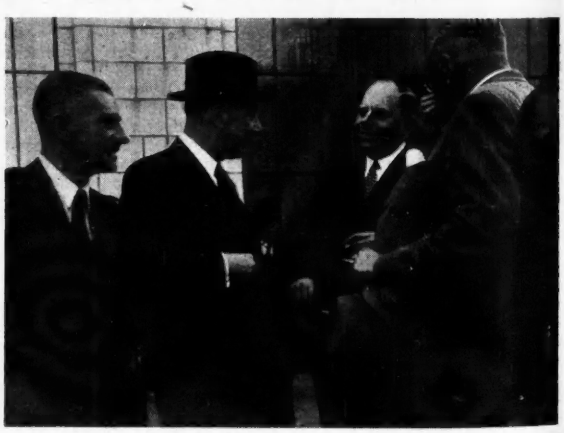
Runners-up (11 shots up): 1. I. McKellar; 2. H. Tanner; 3. A. Athill; 4. J. Mathieson (skip).

At the Annual General Meeting held in the clubhouse, President J. Muir (Galston) intimated that the Honorary Secretary had written to Mr. T. W. Harper (who had now retired from Ayr Gas Company) notifying him that at the Annual General Meeting of the club held at St. Andrews a resolution was passed by the members that Mr. Harper be asked to accept Honorary Membership of the Club. Mr. Harper was one of the first members of the Committee of the Bowling Club formed in 1926 and was the only remaining member of the original Committee. Mr. Harper had accepted and wished to express his appreciation to the members for the honour bestowed upon him.

Mr. C. J. Gregg was elected President of the Club for 1949.

### Ladies' Golf Circle

This Circle, whose virility is due so much to the leadership of Mrs. J. W. McLusky before and after the war and to the present secretaryship of Mrs. Duncan Melvin, held a meeting on the Deeside Course at Bieldside. There were 14 entries for the competition for the Silver Salver (presented by the late Mr. W. H. Handley) and other prizes; and the results were as follows: First: Mrs. Clifford King 70 (net); Second: Mrs. J. B. Wilson 71 (net); Scratch: Mrs. L. Fletcher, jun., 87.



*Mr. D. D. Colvin (Edinburgh), Mr. James Campbell (Regional Gas Officer), and Mr. George P. Mitchell (Newton Chambers & Co., Ltd.), chat with Sir Harold West (third from left).*

**Rotherham Gas Department** has just completed a very successful "Fruit Bottling Fortnight." A special window set was arranged showing the various methods of bottling, together with specimen jars of fruit. The display attracted large numbers of people. Fruit bottling demonstrations were given at frequent intervals during the period by Mrs. D. M. Turner, the Home Service Adviser, who was in constant attendance.

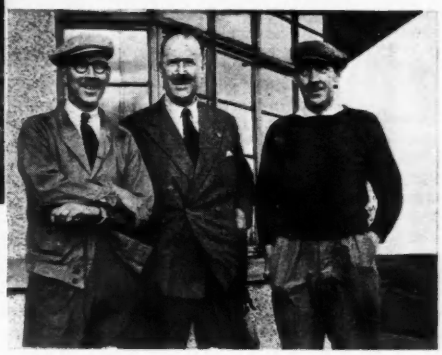
# NORTH BRITISH GOLF CIRCLE AT MURCAR

## EXCLUSIVE "*GAS JOURNAL*" PHOTOGRAPHS OF THE SUCCESSFUL MEETING OF THE NORTH BRITISH GOLF CIRCLE. MR. W. C. HOGG (KELTY) WON THE CHALLENGE BOWL AND CAPTAIN'S PRIZE

*Above are Messrs. R. Keillor (Greenock), C. H. Pearson (London), and D. D. Melvin (Edinburgh).*

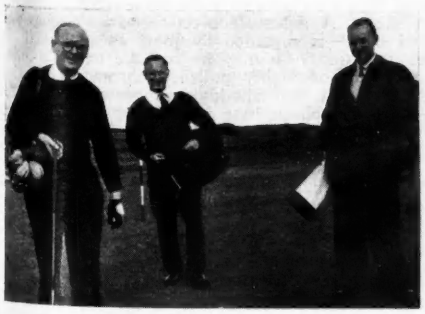
*Messrs. W. Hogg, J. Adams, and W. Freshney. The centre photograph above shows Mr. L. Fletcher, Senr. (Glasgow), and Mr. W. P. Rae (Hon. Secretary of the Golf Circle).*

*Messrs. Rae, Fletcher, Senr., Jamieson, Hall, Mitchell, and in front, W. Hogg, winner of the Cup.*



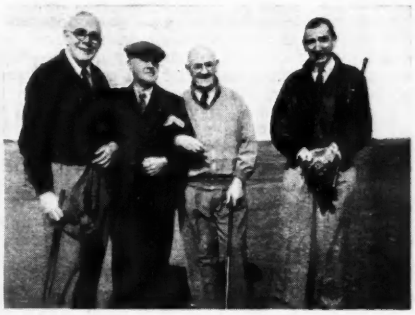
*Mr. A. Jamieson (Johnstone) with Mr. E. Crowther (Newcastle), President of the Institution of Gas Engineers.*

*Messrs. Sam Hall (Edinburgh), Col. W. R. Glover, and John Adams (Glasgow).*



*Messrs. J. Hunter Rioch (Cambridge), J. M. Dow (Paisley), and H. A. Aitken (Leven).*

*Mr. J. Peattie (Glasgow), and Mr. J. Macpherson (Carnoustie).*



*Messrs. R. B. Glover (Manchester), J. Blundell, G. Hamilton (Barrhead), and J. Riddell (Glasgow).*

# COOKER REQUIRED?*

By ARTHUR W. FARQUHAR,

Engineer and Manager, Forfar Gas Department

I APPRECIATE the honour of being asked by the President of the Association to read this paper to you to-day. After much thought I have chosen a subject which I think should be of considerable interest to us all—namely, "The Gas Cooker and the Housewife." It is a subject in which I have been interested during my career and one which I have studied and on which I have collected information for some time. Moreover, I shall be very interested to know if my findings, which have been based on experience, reports, and statistics are in accord with most of yours on this topic. As I have mentioned, I have studied the requirements of the average housewife, what she chooses in gas appliances and her criticism of them after a period of using them. My general conclusion is that the cooker manufacturer, like the architect who has designed and planned a house, is often criticized unjustly and yet he produces a gas cooker which is used very successfully by the average housewife.

Some eighteen months ago I set out to make a factual record by taking a census of the housewife's opinions on what she wants and how she fares with what the gas industry has produced for her in gas cookers. My research has taken me over 350 households in a town of 10,000 inhabitants where the income levels were quite distinct. In the average of the income levels I found that the housewife had much the same idea as to what she had bought for her scullery, kitchen, or kitchenette. The period over which this group have used their gas cookers ranged from 1928 to 1945. On the general condition of the cookers observed, I found:—

16% in excellent condition.
61% in very good condition.
23% in good or fair condition.

All the latter group in good or fair condition had been in use for at least 10 years or over.

## Appearance

Now what is the first thing about a gas cooker which appeals to a housewife? As a general observation, the attractive enamel finish and appearance produced on cooking appliances since the end of the first world war, must be considered. This has helped in the more efficient and happy planning of the kitchen. In short, the first essential of a good cooker to-day from a housewife's point of view is appearance, and that appearance is gauged by, first, clear cut lines incorporating pleasant and attractive rounded edges. Secondly, the gas cooker must have a smooth hard enamel finish. In enamel finish 70% of housewives place the dapple grey or blue as being their first choice, and white or combination of white with other colours formed another 16% of the total observed cookers. Green or cream finishes made up the remaining 14%. I can say definitely that dapple grey or dappled grey/blue is certainly the housewife's first choice on the grounds of the cooker having a clean appearance even immediately after a normal day's cooking in the oven or on the hotplate. In the oldest cookers of my census, the dapple enamel had a very rough surface and after the course of years and hard usage the hotplate surfaces were difficult to keep in good order. A few of these cookers have had new cornices fitted at small cost and the consumers have been very satisfied. Of the white finish I find that even after a few years of use it holds fair comparison with the dapple grey finish and looks extremely attractive alongside other kitchen furniture or refrigerator in a similar white finish. Black enamelled hotplate fittings have improved in durability since 1936, but before this year the finish of these fittings was not satisfactory. After a period of years I found the front enamelled frame of the oven, if the oven door was not tight, showed a distinct discoloration. The use of harsh or abrasive cleaners on the enamel frame generally make the appearance considerably worse. This is a point which might be overcome by the appliance maker—to ensure the door is absolutely tight and that some method be devised to take up hinge, face, or latch wear on the oven door.

The second essential of a good gas cooker to the housewife appears to be speed in giving a large thermal output yet having sufficient performance on all burners to be cut down to a proportionately low thermal output without flashing back. In short, although speed is of primary importance the burners must be flexible and adaptable to meet varying cooking loads. In this respect I find about 20% of the census group would like taps that have larger heads so that a better and finer control can be made in the size of the burner flame. It is also interesting to find that housewives in the census group who have no governors fitted to their gas cookers draw speed comparisons with cookers fitted in prefabricated houses where governors are a standard part of the equipment. The governor should be a recognized fitment to give uniform hotplate cooking under varying hotplate loads and pressures.

## Ease of Cleaning

Ease of cleaning is the third important point stressed by the housewife. About 40% of consumers use some form of abrasive cleaner and this through time damages the enamel surfaces. The makers generally have anticipated "boiling over" and in some cases spillage trays are fitted or a wide sweep downwards has been made on the hotplate casting to take spillage clear of the burner head. The introduction of the cover top smartened the appearance of the gas cooker and was primarily intended as a cover to the hotplate in a living room where the gas cooker was in use. The cover top could be closed over the hotplate without the latter being perfectly clean. Yet the cover top in the closed position was easy to clean in itself and presented a clean appearance. A collapsible plate rack was then incorporated. It is of great interest to find that barely five out of every 100 cover tops are used for their primary purpose and with the 95 consumers who keep their cover tops always up the dust is carried up from the oven flue and adheres to the outside of the cover top. Of those with the conventional back plate and rack, only four out of every 100 would prefer the cover top, while only one out of every 100 with cover top arrangement prefer the back plate and rack. I understand that most of the manufacturers wish the cover top had never been introduced because the number of rejects out of the total number made is very high. Out of 198 housewives with cover tops on their gas cooker only one expressed the desire for a better enamel which would be free from chipping and cracking. Therefore, when we know the difficult problems connected with the manufacture of the cover top this fact gives great credit to the strict supervision for defects which the cooker manufacturer must make. The cleaning of the oven is always a sore point with the housewife, especially when the instruction card makes it look so easy. The general desire as regards the inside of the oven is for hangers and grids as against the embossed side linings and grids. Two grid shelves are usually supplied with a cooker, but the housewife generally requires three. The type of hangers constructed of small enamelled angle strips are not so popular as the hangers or gates made from round strip or stamped out sheet. A flat surface on the oven linings—*i.e.* on the sides and back—is regarded by most as the ideal for thorough and easy cleaning. It may be possible to have linings made of stainless steel or highly polished chrome sheet since enamelled sheet steel gets very shoddy and brown after a few years of oven use. The plinth base is a recent introduction to nearly all models, but apart from a kitchen where there is "built-in" furniture and equipment I have not found the plinth popular. A gas cooker set on a stand or with legs from the base of the oven and at least 7 in. high to enable the housewife to sweep below her cooker oven is still the popular choice.

## Moving the Cooker

Again, there is a desire to take the cooker back occasionally from the wall to get the back of the cooker and the wall washed down. The moving of the cooker needs the attention of a gas-fitter to uncouple the inlet pipe to the cooker and then draw the cooker forward. It was suggested to me that a fitting could be designed on the principle that when the outer portion of the coupling was unscrewed the inner portion, which is live to gas,

* Paper presented to the North British Association of Gas Managers, Aberdeen, September 9, 1948.

could be sealed to stop the flow of gas. An alternative might be found in a type of bayonet fixing which could easily be uncoupled by the gas consumer.

## Reliable Heat Control and Ignition

The modern housewife with a high grade enamelled cooker accepts the thermostat as an essential part of the cooker oven. "Automatic" is a word now accepted very widely and, as applied to the gas cooker, embraces the use of the thermostat and any lighting device which is easier to apply than matches to the burner head when igniting the flame. Since 1923-24 no accessory has gained more popularity than the thermostat. During 1928 to 1945 out of all the cookers observed only four out of every 100 had no thermostat. The difficulty of dust deposit on the thermostat valve created a maintenance problem, but this has now been overcome. The valve can now be removed *in situ* without disturbing the body of the device and supply pipes or sending the thermostat back to the makers for cleaning and resetting. In some cases I found the thermostat was blamed for burning cakes baked in the oven, but on investigation the baking tins were too large, the oven was overloaded, or the flue outlet was too near the wall—all faults creating a bad oven circulation in a perfectly good oven. Generally, the criticisms could be dismissed after the maker's instructions had been observed and strict attention paid to the initial heating-up period at the proper setting.

It was quite revealing to find that in 350 gas cookers 21% had gas pistols, gas matches, or flash lighters; and while 3% of this figure were all-gas houses, 18% had gas for cooking and electric lighting. This is obviously a field which can be greatly expanded and does away with the use of matches or the hand-operated flint lighter. The position of the pistol lighter or gas match has, as you know, been often criticized. Quite a number of consumers point out that the lighter connexion is on the left hand of the cooker and it would be better placed on the right hand side. The housewife grasps the lighter with the right hand and draws the connecting tube across the oven door which is generally opened with the left hand, and the door swings open to the left hand side. On the hotplate a pot or kettle is often put on the flame of the burner with the left hand and the lighter with tube connexion is drawn under the left arm across the hotplate. To increase this convenience to the housewife, a greater efficiency and freedom from maintenance must be achieved. In any automatic device, whether thermostat or lighter, reliability and safety must be the maker's first concern.

To the housewife, burner efficiency comes last for consideration in the buying of a modern gas cooker. This feature again is in the very safe hands of the cooker manufacturer.

Let me at this point briefly repeat the main points. In my opinion the gas industry will be well supported by the housewife, given an attractive high-grade enamelled cooker combining speed with flexibility in cooking, ease of cleaning, reliable thermostatic oven control, automatic lighting of the burners, and a high burner efficiency.

## Maintenance

There are other features one must consider in a survey of gas cookers. One might ask, "What of Maintenance?" This point does not concern the housewife very much because over the 350 cookers I found the maintenance cost was exceedingly small. Approximately 12% of the number of cookers had been maintained by the renewal of grill frets, burners, and automatic lighters, with minor repairs to bakelite parts and the renewal of thermostat gauzes. On the period observed where maintenance had been given, out of every 100 cookers 15 were in excellent condition, 50 in very good condition, and 35 in good condition. In terms of money the average cost in 10 years was average 7s. 6d. per cooker. Enamelled oven, grill pans, and crown plates appear to have stood up to wear and tear remarkably well, but the appearance was often spoilt by fruit and meat stains. Again, harsh abrasive cleaners were responsible for the shabby appearance of the loose enamelled parts.

The foundry moulding difficulties have of necessity given us the gas cooker built chiefly of pressed enamelled sheet steel with the minimum of parts made of cast iron. This innovation in cooker design in this country is so recent that I was unable to get the public opinion. In Scotland the idea of a free standing cooker on stand or legs, made largely of cast iron parts against a cooker of pressed steel with a plinth and a minimum of cast iron parts, will die very hard.

Allow me to comment on one or two points of interest which my census threw up. The use to which the gas grill under the hotplate is directed intrigued me and I found 70% used it for grilling with occasional toasting, 25% for toasting only, and 5% did not use the grill at all. In the latter case the grill frets were generally removed. Quite a number of consumers reversed the grill burner where possible and used the burner for scone, pancake, or oatcake baking with a "girdle." I found in some cases the size of pots and kettles relating to height and diameter trouble the housewife. A large pot, to have sufficient clearance when the lid is lifted, needs ½ in. clearance from the underside of the plate rack. A standard 8 pint pot is just over 13 in. from base to the top of the pot cover when the latter is tilted back. The other point is that of a small 3½ in. diameter egg pot, which is never really safe on the hotplate over the burner. I would suggest that the manufacturers could help by increasing the number or length of spider supports as in the American type of range.

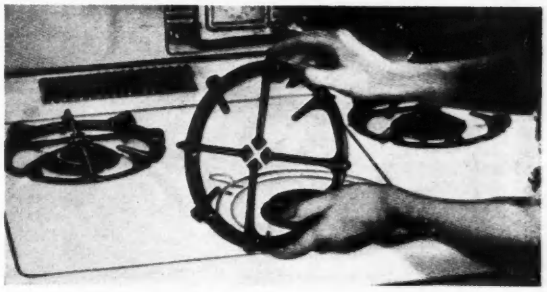


*Fig. 1. American New Utensil Support*

There is also a tendency in some gas cookers when fitted with a thermostat control to place the oven tap too near the oven. In this arrangement the head of the tap gets exceedingly hot when the oven is in use. The spring loaded tap has proved very successful and unequal wear is not apparent on the cookers I observed.

Only one cooker was fitted with a glass door to the oven, but 3-4% expressed a desire to have such fitted to their cooker. The owner of this cooker, bought in 1930, was supplied with a modern model last year and has always expressed great satisfaction at being able to see the job being done in the cooker oven.

I also found that if a modern high grade cooker was installed against an older type the consumption was inclined to rise above the previous gas consumption by 2%. This shows that with greater burner efficiency the housewife obviously had greater incentive to do more work on her new cooker.

## Results of Survey

Here are some figures which you might find worth comparing with your own. In the total survey:—

55% used electric lighting plus a gas cooker;
17% used electric lighting plus gas cooker plus gas boiler;
5% used electric lighting plus gas cooker plus other gas appliances;
23% used gas for cooking and lighting.

The average gas consumptions reveal that a household with electric lighting and a gas cooker was 41,000 cu.ft. per annum as compared with 50,000 cu.ft. in the all-gas house. Of the total using electric light, 8% used gas lighting as a standby in what is obviously the housewife's workroom—the scullery or kitchenette. In a previous survey of 18 houses taken in 1933 where electric light was introduced each tenant retained his gas cooker. The decrease in the consumption of gas, due to loss of the lighting load represented a reduction of 22%.

The cooking loads vary in most households, but for a family of two adults and two juniors there is a general desire for four burners, grill, and large oven, but no general rule can be laid down. I would suggest on what I have observed that for:—

| | |
|---|---|
| 2 Adults | =2 burners and grill, the hotplate area =270 sq. in. Gross oven volume, 3,000 cu.in. |
| 2 Adults and 1 Junior | =3 burners and grill the hotplate area =420 sq. in. Gross oven volume, 4,000 cu.in. |
| 2 Adults and 2 Juniors or over | =4 burners and grill, the hotplate area =470 sq. in Gross oven volume, 4,650 cu.in. |

Floor space often limits the cooker size, but I believe that it gives more satisfaction to the gas consumer if any rearrangement can be made in a scullery to get the proper size for the consumer's needs.

After reading that excellent paper given at the World Power Conference in 1947 by Messrs. Milener and Zare, both of the American Gas Association, I thought it would be of interest to the members of this Association to discuss the type of cooker or gas range as used by our American cousins. Colonel W. M. Carr once remarked at one of our similar meetings that he "came home from America with the impression that on the selling side they were much in advance. This country must take steps to catch up on them, and this could be done only by co-operation in the industry." When one sees and handles the current American cooker manufacturers' literature, I am afraid the words of Colonel Carr are equally true to-day.

The American organizations are all closely knit together. The American Gas Association Laboratories and the American Standards' Association set up certain standards and specifications for safe operation, good performance at high efficiencies, and sound lasting construction of gas ranges. Models of gas ranges which are twice the length of British cookers are tested and receive the official seal when passed as being up to the required standard.

*Fig. 2. Latest American Range*

The Gas Appliance Manufacturers' Association introduced in 1941 the "C-P" or Certified Performance trade mark or emblem which brands a gas range on still higher requirements in performance and construction than the aforementioned standard. "C-P" high-quality gas ranges are tested by accredited laboratories and give the American public an unbiased buying guide. Out of 100 manufactures 95% of all gas ranges must have 575 individual requirements as laid down by the American Gas Association and 15 makers of gas ranges are turning out the "C-P" standard models. The "C-P" models are now being shown in the nation-wide campaign known as "The New Freedom Kitchen," sponsored by the American Gas Association. The selling campaign is in their own words, "the last word in kitchen planning," where various shapes of kitchens are attractively laid out and the designs, size, equipment, and suggested colour schemes are listed to give the housewife the greatest possible advantage of an easy-to-work kitchen. The way of life—living standards, income levels, and housing—is so different in America to our life in Britain that no true comparison can be made. Cooker construction is, therefore, designed to meet that different living standard.

## Four-Burner Hotplate

The popular American range has a four-burner hotplate, an oven, and a broiler, but no grill as we know it. Some of the models have six burners on the hotplate to meet the requirements of large families. The range is practically an all-steel job, built on a chassis of welded construction, enamelled, insulated, and the outer sheets are generally finished in white enamel. Most of the American ranges are standardized in white enamel finish to go alongside refrigerators and drying cupboards. Cast iron, as in Britain, is in short supply and substitutes made from steel stampings and angle iron are still continuing to replace iron castings. The hotplate of the American range is about 38 in. long with four, six, or eight hotplate burners grouped on the left of the hotplate, staggered, or divided with burners on each side of the hotplate. A recent refinement is the insertion of a "griddle" of highly polished aluminium built into the hotplate, and it can be used for warming plates and cooking such foods as bacon and eggs, pancakes, &c. The whole enamelled top can be lifted out of the hotplate framing and is easily cleaned. The cooking top, as the hotplate is called, is die-stamped and where holes are left for the burner heads the sheet metal is dished to give a bowl effect round each burner. This catches any spillage and in some models spillage drawers are fitted under the burners and can be withdrawn to the front of the cooker below the tap rail. The pot supports have as a rule an outer circular casting with long ribs going nearly to the centre of the ring, but not just touching at the centre. They are designed to support any type of pan or pot, steamer, high-pressure cooker, or percolator.

The American housewife does 85-90% of her cooking on the cooking top, and because of this great attention has been paid to the type of burner. The pre-war burner was one size of 9,000 B.Th.U. per hour, but now at least one larger burner has been fitted with an output of 12,000 B.Th.U. per hour. Another feature is the dual burner, which consists of a large burner with a smaller burner in the centre of the large one. They call it the "summer-save" burner and this device is incorporated in both the 9,000 and 12,000 B.Th.U. burners. The one burner can be used for simmering on the inner head, boiling with the inner head at a lower rate than the outer burner, or high-speed cooking on an extra large cooking utensil with both burner heads at full capacity. Thus the whole range of thermal output can be adjusted to the cooking requirements on one burner. The "summer-save" burner is an essential on an American gas range because of the large amount of "waterless" cooking done with a small amount of water over a short period of time. The American thermal efficiency, I understand, was very much lower than in this country before the war, but the American Gas Association has done a good job of work to bring their burner efficiency up to a par with that of British cookers. The "C-P" seal insists that a burner must raise 5 lb. of water to 140°F. in 9 min.

The range ovens are insulated in much the same manner and with the same types of insulation as ours. The Americans like broiled foods and each range has a broiling oven as well as a baking or roasting oven. Broiling is achieved by a gas burner placed in the top of the oven compartment with a refactory material above the burner, and the radiated heat is thrown down on the food to be cooked. The broiling pan holding the food is in two sections, so that in the case of broiling meat the fat can be drained away quickly from the top section into the bottom section without creating smoke. The top section or platter can

*Fig. 3. Showing Arrangement of Oven and Boiler*

be lifted out when the meat is cooked and the whole served direct to the table on the platter. The broiling pan can be adjusted on racks or gates as the grids in an ordinary oven. In this way different types of food can be cooked at varying distances from the flame and the refractory agent. All the range doors are of the drop type having one feature which I like personally—the long handles on the face of the door. This gives a greater ease of grip and smartens the door appearance. The oven interiors are finished in enamelled sheet steel with a minimum of joints to avoid the lodging of grease and to prevent leakage of the hot products of combustion. Broiling burners are rated at 19,000 B.Th.U. per hour and the oven burners at 25,000 B.Th.U. Recently, a "fourth" zone cooking oven has been introduced whereby live steam is used for cooking less tender joints or cuts of meat, vegetables, and foods requiring moist heat. A standard burner is placed beneath a small reservoir of water, which fits into a larger compartment, at the bottom of the special oven. A small quantity of water seeps from the reservoir into the outer compartment and is changed by the heat of the burner into flash steam. The steam enters the oven and builds up to a pressure of 1 lb./sq. in., when a small whistle indicates that the gas tap should be turned down so that 215°F. is maintained in the oven. Both temperature and pressure are automatically controlled. The oven door has a safety control lock and the steam is automatically vented when the door is about to be opened. The American housewife does a good deal of low temperature cooking in the gas oven down to 250°F. to reduce shrinkage of meat and the destruction of minerals and vitamins. In some ranges storage drawers are fitted in the chassis and in large type ranges a radiator is incorporated as a space heater to the kitchen. All the panels—sides, back, and front—are extended down to floor level.

Automatic lighting of burners is practically universal with a flash ignition using a constant burning by-pass for both hotplate section and ovens. If the pilot or by-pass is extinguished an automatic safety valve closes and makes the burner safe from

unburnt escaping gas. The electric element ignition is coming into favour and this can be incorporated with an electric time clock. This combination lends itself to "absentee cooking" in which the time clock is set for automatic ignition at a predetermined time and also automatically shuts off the gas supply at the end of a definite cooking period. Thermostats are of the tube and rod, bi-metal strip, and the bulb or capsule type. The latter is the most popular in the high priced ranges and maintain temperatures between 250°-550°F. at a very close control.

The venting of cooking odours is considered in the latest ranges. In some parts of Canada the municipal law lays down the regulation that a 4 in. flue connexion must be on a gas range and the vent must be connected to a chimney. The back splash or back rail is 9-10 in. high and is an integral part of the hotplate stamping. The back rail houses accessories, such as electric strip lighting, condiment sets, automatic time clocks, or reminder clocks to chime at certain cooking periods. Other refinements can be fitted as additions—oven electric lights, armoured glass oven doors, cooking charts enamelled on the inside of the cooker door, and click positions for cooking settings on the moulded tap heads of the hotplate gas cocks.

While the American gas range is designed to meet the varying types of gas distributed in that country, I feel sure that we can profit by American practice, and they in turn may learn from our methods.

In giving you this paper I would like to thank Mr. Segler, of the American Gas Association, and the various gas appliance makers in America who were so enthusiastic in giving me their up-to-date information. I have also to thank all the 350 housewives who supplied me with all their likes and dislikes and their ideas and who firmly believe that gas is the best medium for cooking.

I do trust I have said enough not only to interest you to-day but in supplying you with information which will enable you to talk more freely about gas cookers and to direct more expertly the housewife in her choice of cooker.

## DISCUSSION

Mr. **F. R. Mitchell** (Lanarkshire) felt that the information given in the paper on American cookers was most useful. In this country they were too conservative, but American manufacturers were ready to make experiments and try everything. There would be a greater use of cast iron in future designs and that manufacturers would have to meet the new ideas in standardization.

Mr. **W. S. Johnston** (Dundee) said that the census taken of the housewives' opinions was very interesting and valuable. He felt that something could be done to prevent damage if the housewife moved the cooker. It should be made fool-proof. People were very careless in the way they pushed the bayonet into the socket, and in Dundee they had had considerable trouble from this source. He was pleased to see that Mr. Farquhar's survey showed that when a modern high-grade cooker was substituted for an older type the gas consumption had risen by 2%. In Dundee they had the opposite experience. When they were operating hire purchase one man had paid his instalments out of his savings on the gas bill. He was interested in the American designs and practice. In this country we were lagging behind in appearance, but although America seemed to be a step ahead of us, our way of life was different. In some of the older type of houses it was difficult to find a place where one could install a modern cooker.

Mr. **R. Cowie** (Hawick) congratulated Mr. Farquhar on his paper. It was refreshing and healthy to see that they were coming to the end of the seller's market in gas cookers. They would be glad to get back to the old days and to consideration of what the consumer wanted and needed. The paper was controversial and those of them who sold cookers would have varying opinions on the points raised. The consumer had first to consider the choice of fuel, then the choice of the appliance, and appearance was also taken into account. In American magazines there were marvellous illustrations of American cookers, but he doubted if America was ahead of Britain. These illustrations were of luxury types, but in this country they depended largely on working-class business. They had no room in Scottish homes for the large American cooker. He would make a plea for the re-introduction of the small cooker. In many houses the kitchen was now the living-room and the range had given way to the interior grate. The lack of small gas cookers was serious. Manufacturers should give thought to the question of high pressure cooking; if they did not yet on to this high-speed cooking under pressure some of their competitors would do so. The employment of a home service adviser, even in a small undertaking, was worth while, and there was room for a showroom attendant with good practical training who could go out and attend to the complaints in houses. He had had experience of a housewife complaining repeatedly until it was discovered that it was her recipes and not the cooker which were to blame.

Mr. **David Fulton** (Helensburgh) said that from the discussion it would appear as if cooker manufacturers had not the foggiest idea of what the public wanted. This was strange as they managed to pay good dividends by getting gas engineers and sales organizations to sell to the public something that the public evidently did not like. The manufacturers probably knew more about what the public wanted than any single undertaking. In Mr. Farquhar's market research there were many things with which, as individuals, they would disagree. The thermostat should be standardized, so that the reading would give temperatures and not figures. He suspected that the public chose dapple instead of cream because they could not afford the latter. He had always been an admirer of American cookers. A friend in Norway had told him that he displayed American cookers in the windows of his showroom. This brought the people in and they were sold German cookers because they could not afford to buy the American ones. The American cookers were superior to the British in appearance, yet when they were made in this country under licence they had never established a really satisfactory market.

Replying to various points raised, Mr. **Farquhar** said that standardized designs would come, but pressed steel cookers were not regarded as acceptable in Scotland. American cookers had ventilation, and this was a good feature. He agreed that green and cream were the popular colours, but from 1938 to 1945 all cookers were in dapple grey. His experience with bayonet fixing in pre-fabs had not been happy, but that was not to say that a good bayonet fixing could not be arranged; it was primarily a question of available materials. The American cooker, when shown, was usually preferred because of its lovely appearance, but the Council of Industrial Design had stated that streamlining had not been a good thing with gas cookers.

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### N.B. BOWLING CLUB

*The Lord-Provost of Aberdeen (Mr. Duncan Fraser) with members of the North British Association Bowling Club. The meeting took place on the Carlton Place green of Aberdeen Bowling Club.*

*—A." Gas Journal" photograph.*

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# ADVANCES IN STREET LIGHTING TECHNIQUE*

By N. BOYDELL, M.I.E.E., A.M.I.Mech.E.,

Manager, East Sussex and South-West Kent, South-Eastern Electricity Board

PUBLIC lighting in 1924 (in which year the Association of Public Lighting Engineers was formed) was a very haphazard business indeed and there was no independent body from whom authorities could gain information. Since those days, the Association has been recognized by Government Departments, Town and City Councils, and has rapidly increased its membership and continues to do so. It has played a big part in the development of public lighting engineering to the high standard it has reached to-day.

Milestones in this progress were as follows: First, the issue of the British Standards Institution's Specification in 1927. Next, the Sheffield demonstration of 50 separate installations to illustrate this specification, which demonstration, incidentally, went far to disclose the limitations of the specification and evidenced the correctness of the new theory of high road-brightness.

Then came the formation by the Minister of Transport of the Departmental Committee on Street Lighting, which Committee issued an Interim Report in 1935 and its Final Report in 1937. This Report is in the form of recommendations only, and a Code of Practice will be issued in due course which will, in effect, implement these recommendations and at the same time take the place of the original British Standards Specification.

Then there has been the application of sodium and mercury discharge lamps to street lighting, and to my mind it was at this point that the public suddenly became street lighting conscious and have since taken a much greater interest in all forms of street illumination.

During this period, apart from playing a large part in actual technical development, the influence of the Association has without doubt stimulated interest and initiative in the development of street lighting, and now, within a year of its Silver Jubilee, the Association can point to progress in the many miles of motoring roads and shopping streets lighted to a standard never dreamed of in 1923, and to the thousands of side roads better lighted than the main roads of that period.

## The Day of the Expert

The progress of the Association itself has been in proportion. Recently, two local centres have been formed, one in Lancashire and one in Scotland, and in addition to the large membership in this country, there are members in the Dominions and in foreign countries. All men directly or indirectly responsible for street lighting and who are not members of the Association should seriously consider whether they can afford not to be. After all, this is the day of the expert.

The chief function of the Association is to educate the public in general, and the lighting authorities in particular, with regard to the necessity and value of good lighting. Things are very often done only when public opinion demands them, and the relation of crime and road accidents to bad or non-existent street lighting has to be brought home. That there is an appalling lack of uniformity in street lighting throughout this country is undeniable; lack of uniformity in standards, arrangements, spacing of columns, heights of columns and, crowning absurdity, examples of completely different systems with different standards of illumination on each side of the same road. You have only to drive a few miles in this country to know there is something fundamentally wrong. You can drive through one prosperous township which is particularly well lighted, and where the streets are safe for drivers and pedestrians and where there is an air of cheerfulness, and then you can enter an equally prosperous township which is badly lighted, the equipment antiquated, and there is an air of gloom. The fault here lies not in lack of money, but in lack of this education or in indifference on the part of the authority and its responsible officials. Too often, even when there is plenty of money available, the street lighting is treated as the Cinderella of the services.

The fundamental trouble with bad lighting lies in the fact that the statutory position is such that the provision of lighting is still, to all intents and purposes, optional by the local authorities, large and small; and there are so many lighting authorities who, because of their limited size, have not had and never will have, under the present arrangements, sufficient money to provide lighting up to the standard needed to-day.

There have been half-hearted attempts to meet the position, such as the provisions of the Road Traffic Act, 1934, giving County Councils certain powers (of which little advantage has been taken), and those of the Trunk Roads Act, 1936, which has allowed the Ministry of Transport to assist financially with the lighting of trunk roads. This has been exercised considerably, but at best it is merely a scratching of the surface.

The Ministry of Transport Committee's Final Report recommends that the administration be put in the hands of fewer and larger units, but there seems to be no reason why each local lighting authority should not continue to administer its own lighting, provided it is made a legal obligation and is subject to some central control and improvements are substantially helped by national grants. The Ministry of Transport takes a considerable interest in the construction of a road, and the economics thereof and so, surely, the provision and maintenance of the lighting of that road should be considered as part of the whole.

## Road Accidents

Where is the money to come from ? Some people would say that it should come from the motorist via the Road Fund, and this brings me to the subject of road accidents, another aspect with which the Association has been concerned a great deal.

The volume of present-day traffic approaches twice that of pre-war, and many of the vehicles are old, but the majority of the roads remain lighted to the pre-war standard (ignoring the 25% fuel cut for the moment). This traffic demands better street lighting, and yet, apart from the "Keep Death off the Road" and the "Traffic Jimp" propaganda, there appears to be no special effort directed to lessening the accident risk during the period of darkness which is almost equal to half the year. The use of headlights in poorly lighted areas, instead of lessening the accident risk, contributes to it. We all frequently have had the experience of driving blindly into the black void to the left of an oncoming car, the alleged dipping arrangements of which are to switch one lamp out and leave the other blazing into our eyes, and in doing this we pray that no one is stepping off the kerb. On the other hand, properly lighted roads induce drivers to switch off their headlights. Tests have shown in one such case that in a short period of the evening, whereas 52 cars used headlights before improved lighting was installed, only nine cars used them afterwards.

It has been calculated that the cost of road accidents in the period 1935-38 was £60,000,000 and under the conditions of 1945 this figure would be £100,000,000. Compare this with the figure of £3½ mill. which the Ministry of Transport Committee estimated would be the annual cost of lighting all classified roads in county boroughs and 20% of those in counties to the standard they recommend In effect then, adequate street lighting can be provided at a cost very much less than the cost of accidents it is calculated to save.

Another aspect of this is that in 1938 there were 740 fatal accidents in factories and 6,642 fatal accidents on roads, and of the latter, for every one which occurred in daylight, three occurred at night. We know the elaborate but quite necessary precautions which are taken to try to prevent factory accidents and the penalties incurred by a lax authority, and yet nothing like the same precautions are taken in connexion with a risk which is several times greater; certainly no penalties are incurred by the offending authority. It is possible, of course, that eventually the insurance companies will take some action, as I understand occurred before the introduction of the Workmen's Compensation Act.

## Street Lighting and Crime

With regard to the relation of street lighting to crime, there are statistics available from America which clearly prove that good street lighting reduces that type of crime of which 90% takes place after dark, and our own Chief Constables' Association has said that effective lighting acts as a deterrent to criminals who specialize in breaking-in offences.

Before I leave these road-accident and crime aspects, there is another contributory factor which has exercised the Association considerably. I refer to the restriction of street lighting consumption to 50% of

* Extracts from Presidential Address to the Association of Public Lighting Engineers, Eastbourne, Sept. 14.

that of the pre-war figure (recently increased to 75%). We must all accept the fact that conditions are at present difficult, particularly as regards labour and material for new lighting. We must accept also that the fuel situation might still be difficult despite the general impression to the contrary. It is surprising, however, how so very many people do not realize how comparatively little fuel is used by street lighting, and that, as an example, quite a long street is well lighted for less energy than is used by one electric fire.

However, the Association can point to hundreds of miles of well-lighted motoring roads, shopping streets and side roads, and yet, even in these cases, many of the advantages of such lighting have still to be appreciated. The enlightened authority primarily looks upon its good lighting as being for the convenience and safety of the road users, and also for the prevention of crime and other police purposes, yet there are other reasons for lighting a town well. For instance, for the convenience of citizens as they go their lawful ways and also to increase the attractiveness of shopping centres and civic centres—in general, to give a town as pleasing an appearance by night as possible. All these aspects have a real economic value.

The best architectural features of a street are often brought out more clearly by good street lighting than by daylight. Good lighting is often the reason for, and an indication of, civic pride. It is often an indication of prosperity, and in the long run the value of the property is increased. It is my view that new residents and visitors are attracted to a town where street lighting is of a high standard.

## Civic Pride

The industrial revolution left hundreds of towns in the industrial areas of the country with hardly a redeeming feature aesthetically and, until recently, no one thought of making any improvement. Anything painted was painted in the drabbest colour because it was the most resistant to weather and it occurred to few that a start must be made somewhere. Now, of all things, it is a new street lighting installation which has made this start. Streets which were lighted for years in a most dismal manner are now lighted exceedingly well and, by day, the well-designed columns enhance the appearance of a street. Frequently, in front of the town hall, the old cast iron columns and enamel reflectors have been replaced by dignified and properly designed columns with appropriately impressive fittings.

We have still a long way to go in this country, however, with regard to appreciation of the daylight appearance of installations, although the importance of this is now realized and the Royal Fine Art Commission are actively interested. The U.S.A. are very far ahead of us in this direction, and in Paris they really *are* concerned with aesthetic values. The street lighting installation receives as much attention from this point of view, both in daylight and in darkness, as it does from the point of view of the scientific distribution of light. Apropos of Paris—when, in this country, will we reach the stage of appreciating the importance of these things to the extent of the following example: On the Pont du Carrousel there are columns which, by daylight, are only 14 metres high, so as not to spoil the aesthetic views in the neighbourhood, but by automatic means at dusk the columns are extended, telescopic fashion, until they are 21 metres high, to provide appropriate light distribution, the whole process being reversed at dawn. Ideas like this could well be applied in this country as, possibly for instance, on the new Waterloo Bridge in London. There is one pleasing idea which is gaining some favour in this country, and this is the fixing of flower baskets on columns. It may not, in some cases, be aesthetically correct, but it certainly does add a splendid touch of colour to a street.

There is a real need for maximum co-operation in several ways between lighting engineers and town planners and others responsible for the planning, construction, and maintenance of our roads. One example of this need is the growing interference with good lighting by trees planted along the highway. This is a problem now and will be a greater problem in the future, and the solution undoubtedly lies in full collaboration between the interested parties and, in this respect, conferences like this point the way.

## Road Surfaces

A more fundamental reason for maximum co-operation between the road engineer and the lighting engineer, however, is the question of road surfaces. There is no doubt that light distribution engineering has reached a high standard, but the other half of the story—the road surface—is almost entirely neglected from the lighting point of view. There is need for the road surfaces to be, for the most part, of light matt colour to provide effective reflection and diffusion of light. This presents a difficult problem, since the road engineer considers his surface from quite a different point of view, and is not concerned with colour and reflectivity. It is obvious that there is not enough consideration given to the type of road surface needed to meet the requirements of both parties, and closer co-operation might produce the desired result. The Association has been very much concerned about this aspect.

I have said that the standard of light distribution engineering is very high, and so it is. Here I wish to pay tribute to the Associates of this Association and the manufacturers whom they represent. The great progress in technique during the life of the Association, particularly with regard to fittings, is largely due to these firms. They include some of the largest concerns in the country, and have never ceased to give street lighting an important place in their research and manufacturing organizations, and some of the ablest research men have devoted themselves to this work. The results can be seen on the best lighted roads in this country to-day.

Here again the question of appropriate education arises. Lighting authorities, large and small, without exception, cannot afford not to be advised by someone or some authority really competent to deal with the subject, and to cover the following:

1. Schemes in line with modern requirements.
2. Advice on the replacement of antiquated fittings.
3. Comparison of manufacturers' proposals and tenders.
4. Correct installation of the new schemes.
5. Proper maintenance and periodic efficiency tests.
6. New developments.
7. Last, but not least, liaison with contiguous authorities.

It cannot be gainsaid that the technique of street lighting is beyond dispute a branch of electrical or gas engineering, and has gone a long way from the idea of a lamp on a pole at intervals. The local authority surveyor recognizes nowadays that while he is concerned with the road surface and road safety aspects of street lighting, the lighting technique itself is generally the purview of the electrical or gas engineer.

## Specialist Engineers

In cities and large towns the lighting arrangements are, in many cases, under the control of specialist lighting engineers, and this may be the best arrangement where the authority is large enough to command, and pay for, the best advice, and where the general resources are considerable.

In the case of the lesser communities, however, the lighting authority for the most part has been advised, either through the surveyor or directly by the local electrical or gas supply engineers who have employed lighting specialists on their staff.

The recent advent of nationalization in the electricity supply industry, and the impending repetition of this in the gas industry, should make no difference to this arrangement in principle. With regard to the Area Electricity Boards, it should be made clear that they are prepared to continue this service to such lighting authorities, by entering into complete contract agreements generally embracing the seven major requirements listed above. In fact, this arrangement has many benefits, not the least of which is that it would help to bring to fruition one recommendation of the Ministry of Transport, that is, standard lighting on contiguous sections of roads by adjacent lighting authorities. Another relevant point here is that much of the modern control of street lighting is an integral part of the electricity distribution system, and will become increasingly so in the future as large areas of street lighting are switched on and off *en bloc* by central control of one kind or another.

The importance of good public lighting is now being realised, and is the active interest of civic representatives, manufacturers, lighting specialists, electrical and gas engineers, surveyors and officers of Government Departments, many of whom are now members of the Association. The new British Electricity Authority and the Area Electricity Boards are fully alive to the importance of the subject, and have not been slow to add a representative quota of delegates to this conference. We welcome them, and look forward to their valuable participation in the future affairs of the Association. This also applies to members of the gas industry in its future form.

To my mind there is no doubt that as the value of the Association is further appreciated, particularly as it provides the only common ground on which the problems can be discussed, the Association will march forward from strength to strength and will play an even greater part in the development of the lighting of our streets and roads to the magnificent ideal which the founders saw dimly 25 years ago, and which is now, if the difficulties are approached resolutely, within measurable distance of attainment.

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## NEW SALESMAN'S EXAMINATION

The Council of the Incorporated Sales Managers' Association has reached agreement with the Executive Council of the United Commercial Travellers' Association of Great Britain and Ireland (U.K.C.T.A.) Incorporated concerning the future of the Examination in Salesmanship.

I.S.M.A. will conduct an examination in saleasmanship for the last time in May or June, 1949, and will issue its present certificate to all successful candidates. Thereafter, the United Commercial Travellers' Association will undertake complete responsibility for the conduct of the examination, and is planning a revised syllabus, on which the first examination will probably be held in 1950.

The Examination in Sales Management will continue to be conducted by the Incorporated Sales Managers' Association. One of the subjects in this examination will continue to be "Principles and Practice of Salesmanship."

# PUBLIC LIGHTING EQUIPMENT EXHIBITION

## AT THE A.P.L.E. CONFERENCE AT EASTBOURNE

FOLLOWING last year's successful demonstration of public lighting at Southport, the Association of Public Lighting Engineers reverted this year to the custom of holding an exhibition of street lighting apparatus and equipment in connexion with their annual meeting and conference which opened at the Winter Gardens, Eastbourne, on Sept. 13 under the Presidency of Mr. N. Boydell, Manager of the South-Eastern Sub-Area (East Sussex and West Kent) of the South-Eastern Electricity Board. After extending a welcome to the members in the Conference Hall, the Mayor of Eastbourne, Councillor R. E. Richards, J.P., officially opened the exhibition at the Pavilion. We hope to refer to the meeting, the Presidential Address, and certain of the papers in a later issue.

The exhibition, which remains open all this week, is a striking display of modern developments in street lighting technique. Below we give brief descriptions of the stands which are of particular interest to the gas industry.

**The Automatic Telephone and Electric Co., Ltd.,** is showing illustrations of supervisory remote indication and control apparatus with particular application to the gas industry. Briefly the system can provide for several hundred different items of equipment to be controlled from a central point over a single pair of ordinary telephone conductors. The distances over which the equipment will operate are practically without limit, the same signalling technique being used as for long distance telephony, including both D.C. and V.F. impulsing. The equipment, which consists of standard telephone components such as relays and uniselectors, provides firstly for the continuous indication of the condition of all items of distant equipment together with an alarm immediately any change takes place and secondly for the selection and subsequent remote operation of any particular items. These features can be applied, either wholly or in part, to the control of gas storage and distribution and can provide the following facilities: (*a*) Indication of gasholder stocks; (*b*) indication of pressure and flow; (*c*) controlling the starting and stopping of compressors; (*d*) control and indication of "open" and "closed" condition of motorized valves; (*e*) regulation of volumetric governors and pressure regulators, assuming the types used are suitable for remote operation; (*f*) indication of the position of non-return valves or manually operated valves; (*g*) the automatic signalling with audible and visual alarms of such conditions as low pressure and gasholders reaching the extreme position, *i.e.*, full or empty; and (*h*) instrument readings. In addition, telephone communication is also provided between the control room and the remote station over the same connecting wires.

**British, Foreign, and Colonial Automatic Light Controlling Co., Ltd.**—In view of its long standing connexion with the Association of Public Lighting Engineers and the fact that its "Gunfire" and other productions are a household word with public lighting engineers, this Company has this year made its stand a communal centre for old friends. There is on view a small display of present-day production of time switches and gas controllers generally used in up-to-date lighting installations

**British Gas Council.**—The theme of the British Gas Council's contribution to the exhibition is "Let us help solve your problems." To do this, they have designed a stand which shows the gas-lighting of a typical Class "A" and a typical Class "B" road in miniature. Visitors to the exhibition are able to ask the officers in charge of the stand questions about public lighting and pose their individual street-lighting questions for demonstration on the stand. A second B.G.C. contribution is a piece of equipment to demonstrate the effects of glare on road surfaces. Visitors can adjust the lighting of the exhibit by a system of resistances and so judge how different lights may cause glare on the roads. The main stand is 14 ft. by 7 ft. and is No. 32. A slogan for the stand is : "Better Lighting—Safer Roads."

**Concrete Utilities, Ltd.**—On the column display site at the Winter Gardens Concrete Utilities, Ltd., have erected seven Class "A" columns with Arc II and Avenue type brackets, ranging from 2 ft. 6 in. to 5 ft. outreach. Also on display by the same Company are three Class "B" columns. With the exception of three columns, all those exhibited have the rubbed cement finish, although a ground finish can be supplied if specially required. It is pointed out that atmospheric corrosion will, over a period of years, remove free cement, and give a natural pitted appearance, as is the case with any other concrete surface. It should be noted that this pitting is not detrimental to the column, in fact it enables it to weather to tone with the surrounding buildings, which are also subject to the same corrosive action. The Company are also exhibiting on their stand in the Conference Hall several 1 in. to 1 ft. models of their standard column designs, also a model of a 36 ft. transmission pole, fitted for floodlighting, complete with platform and brackets. This type of pole is especially suitable for the illumination of dockyards, railway yards, &c., where access to the floodlights for servicing and a robust design is required. Examples of finishes, ground and rubbed, are on display, also sections of a street lighting column, showing reinforcement and switchgear compartment. Attention is drawn to one of the main stand exhibits, namely the Sugg C.U. bracket, which was designed in conjunction with William Sugg & Co., Ltd. This bracket was specially designed with a control box, built in to house the control gear for the lantern, thus maintaining a generally pleasing appearance of the pole and having equipment well concealed but easily accessible. A new concrete "Keep Left" bollard has been designed in conjunction with Gowshall, Ltd., and is exhibited on the stand of Concrete Utilities, Ltd., in the Conference Hall.

**William Edgar & Son, Ltd., Hammersmith,** are exhibiting their Eclipse lamp with a new mounting to be named the "New 1948 Mounting." The lamp is manufactured from 12 lb. copper throughout, the gas and air regulators and the injector being made from brass bar. The burner box is a brass casting, metallized aluminium, and the flue and reflector shade is of heavy gauge mild steel, vitreous enamelled. The supporting arm, of a ¾ in. B.S.P. steel barrel, finished in a choice of aluminium paint colours, is made in lengths to suit requirements; the vertical arm is similarly made of 1 in. B.S.P. steel. A clock controller box is fitted in a special casting and the spigot is a substantial aluminium casting of pleasing contour.

**Gowshall, Ltd.**—Selected products comprise illuminated signs, guardposts, island sites, external lighting fittings for all signs, a variety of tubular steel posts and columns, and illuminated plastic beacon globes. All are in conformity with recommendations contained in the report of the Departmental Committee on Traffic Signs, 1944, and subsequent Ministry of Transport communications. Internally illuminated signs include standard "Keep Left," mandatory, informative or directive, and signal head patterns. Illuminated guardposts of three different designs are on view—type GSP with ⅛ in. or ⅜ in. thick plate steel (rustproofed) chassis, and types 336 and 337, with three aspect lanterns. All guardposts are made to give long trouble-free service and all materials and finishes are the best obtainable. Ease of maintenance and lowest possible running costs are essential features, and components damaged by accident can be quickly replaced (and supplied). Guardposts and other internally illuminated signs can be supplied for electric or gas lighting. Cast iron island sites of very substantial construction are in two sizes, 3 ft. by 3 ft. or 4 ft. by 4 ft. square or triangular. These are made to withstand heavy impact and can be easily and quickly installed. Tubular steel posts and columns include 3 in. and 4 in., in lengths up to 18 ft., also columns with 7½ in. base sections, complete with 7 in. by 14 in. hinged doors, giving ample access for switchgear. Plastic pedestrian beacon globes constructed from "Perspex," are translucent and finished standard yellow. Each globe is complete with cast aluminium socket, and is suitable for mounting directly on a 3 in. post. Specially designed anti-vibration lampholder units, of strong construction and simple fixing, are made for use where globes are to be illuminated.

**Horstmann Gear Co., Ltd.**—On Stand No. 17 are the gas exhibits of this Company. Stress is laid on the savings effected in public lighting costs by Comet ignition which eliminates permanent by-passes. Based on the conservative figure of ¼ cu.ft. per hour, 1,000 by-passes consume 2,190,000 cu.ft. of gas per year while Comets consume less than 1,000 cu.ft. per year for a similar number of lamps. The economies effected are increasing the demand for this precision-made yet robust appliance. A comprehensive range of controllers suitable for all types of gas street lamps is seen, including 21-day and 40-day run models. The industrial type 3A/UNI may also be inspected. This controller is fitted with compression unions and fixing bracket. Used in conjunction with a relay valve it is attaining great popularity where industrial time control is required and fuel and man-hour economy is vital. Another model which is creating interest is type 3/VER for use with water loaded district governors.

**Metropolitan Gas Meters, Ltd.**—This year the Company has taken stand No. 18 at the exhibition and is presenting for the first time its new Duplex electrical time switch. The time switch incorporates a number of new features of special interest to public lighting engineers in view of the possibility of further cuts in electricity this coming season. Also on show is a standard range of gas lighting controllers in both brass and plastic cases. Representatives are present at the stand to give demonstrations with working models and also to display cut away sections.

**Parkinson & Cowan (Gas Meters), Ltd.,** are exhibiting their "Maxilla" range of lanterns for Group "B" lighting, which conforms to the Ministry of Transport requirements, with a recommended mounting height of between 13 ft. and 15 ft. and with average spacings of 120 to 130 ft. staggered.

The "Maxilla" lantern mounted at 15 ft. is recommended for secondary traffic routes, as street lighting effectiveness has been enhanced by the adjustability of faceted reflectors, constructed of aluminium and anodized by an improved process, permitting an effective distribution of light allowing for variations in the configuration of roads, including bends, gradients and road widths. Gas

consumption is controlled to 2½ cu.ft. per mantle per hour, by incorporating a constant pressure governor set at 25/10ths W.G. pressure, in conjunction with a correctly calibrated fixed nipple. The lanterns are also supplied with suspension fittings, incorporating a strong centre feed casting. The "Maxilla Junior" lantern has been introduced for residential areas and side streets as an economic street lighting unit where it is considered gas consumption should be reduced to a minimum. This lantern is fitted with standard gas and air adjuster, and the "Morlite" two-way or four-way reflector, which can be easily removed, cleaned and replaced in the same position, without altering the angle of light distribution. Prices for all upright lanterns include standard 3½" frogs, but where existing columns demand it, special dual purpose frogs are available to give the recommended mounting height. One of the main features is symmetry of design, affording interchangeability of standard parts, and enabling both types of lantern to be incorporated in any lighting scheme.

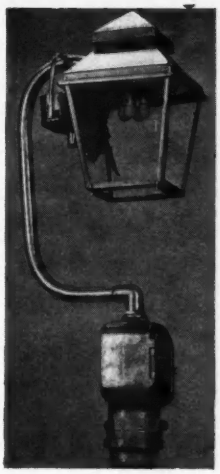
**Poles, Ltd.,** Birmingham, are exhibiting their "Adastra" galvanized steel lighting columns, which are a logical development claimed to closely approach the ideals of engineering principles as applied to the purpose of supporting sources of illumination in all situations out of doors. Designs in the unique tapering, hexagonal and circular sections provide for mounting lanterns at any height required. Adequate accommodation is provided for auxiliary equipment in the base of the column, with an inspection door and slotted steel instrument panel. The columns are strong yet light in weight and all sections for one column nest into the space occupied by the largest section. This makes for convenience in transportation, added to ease in erection. The weight of a circular column for a 25 ft. mounting height is just under 2 cwt. and it nests into a space 79 in. by 11¼ in. The range of standardized designs exhibited cover all general usage for street lighting: special types can be provided to specific requirements where large quantities are involved. The basic finish of all "Adastra" columns is hot spelter galvanizing. The heavy coating of zinc provided by this finish is recognized as the proved method of protecting steelwork in all climates and has stood the test of time in inland and coastal atmospheres.

**Stanton Ironworks Co., Ltd.,** Nottingham, are exhibiting some of their spun lighting columns, a product of their concrete plant which is the largest in Britain. The seven lighting columns shown were produced by the Stanton centrifugal process, which ensures a concrete of great strength and density, reinforced by a high tensile steel "skeleton." Impervious to weather, the smooth finish is claimed to improve as time passes. Type 6B, with a mounting height of 25 ft., can be fitted with brackets of any length from 8 ft. to 2 ft. 6 in. This model has a Bleeco Streamline prismatic panel lantern. Type 6K carries a B.T.H. Mazdalux fluorescent unit and is of the same height as 6B. In Stand No. 41 in the upper part of the Pavilion, aerial views of the Stanton works and photographs of the manufacturing process are on show.

**Spun Concrete, Ltd.,** are exhibiting, on the rink adjoining the Conference Hall, columns of 25 ft. mounting height of improved design incorporating many new features including new slim base chamber with a flush fitting concrete panelled door, an improved fitting and locking device, and an improved arrangement for securing arm to column ensuring correct seating through 360 degrees. In the design of these new columns minimum base dimension has been maintained without sacrificing balance. On Stand No. 45 the main exhibit is a cut down section of a 25 ft. column showing the ample accommodation for control gear in the new slim base. The section also shows the spacing, binding and central location of the reinforcement. A large number of new arm designs can be seen in the form of models together with the suggested type of lantern, and a full scale section showing the improved method of securing arm to column.

**Wm. Sugg & Co., Ltd.,** Westminster (Stand No. 29), are chiefly showing their "Southport" lamp which proved such an outstanding feature in last year's Conference at Southport. This lamp, with its extremely modern design, has a double-unit light source suitable for main traffic routes or shopping centres. Its two burners each carry six medium-size mantles in staggered formation, a separate gas supply being taken to each from the dual supply Horstmann controller (a single supply controller can also be used if desired). This construction permits of the reduction of the power of the lamps by 50% as required; a valuable feature under present lighting restrictions. The lamp is normally mounted by clamping direct to a horizontal bracket arm, an arrangement which effects a notable economy in column height and is easily adaptable to most forms of existing pole equipment. The lamp is equally adaptable for use with any normal type of mounting, including raising and lowering gear. The Holophane refractor plates have been specially designed to give even road surface brightness and good visibility without excessive glare. The single unit has similar features to those of the double unit, the main difference being in the number of mantles employed and in certain simplification in construction which is permissible when the unit is used at a lower mounting height. Various sections of the "8000" lamp for side street lighting are also shown. The exhibits include the "Rochester" lamp and the Sugg C.C.S. control gear, which provides a method of remote control of any number of units, independent of the gas supply. Another interesting exhibit is the new Sugg sign illuminator, which has been primarily designed for the illumination of road signs.

**Stewarts and Lloyds, Ltd.,** are exhibiting 12 tubular steel lighting columns, which represent the standards developed by the Company to meet the recommendations of the Ministry of Transport for street lighting at mounting heights of 25 ft. (for main traffic routes) and between 13 ft. and 15 ft. (for other than main traffic routes). The columns are complete with lanterns of the pendant, side-entry, top mounting and fluorescent types, and have ample accommodation for control gear. The columns erected are without added ornamentation, which many engineers consider unnecessary not only on aesthetic grounds but undesirable from a utility and maintenance point of view. The columns are specially recommended on the basis of strength and reliability, pleasing appearance and small obstruction on footpaths. The tubular steel columns exhibited comprise: For Group "A", Traffic Routes, two plain and two fluted single bracket arm types, one plain and one fluted single shepherd's crook type, one plain double bracket arm type, and one fluted double shepherd's crook type; for Group "B," other roads, one plain and one fluted "S" type, and one plain and one fluted "P" type. On the Company's stand in the Conference Hall other products include service pipes and mains, a variety of joints to suit different working conditions, and examples of protections for inside and outside surfaces.



*The new modified swan neck Cranford lamp (Willey & Co., Ltd.), designed to give the correct mounting height on the longer columns now coming into use*

**Willey & Co., Ltd.,** are exhibiting a range of Cranford lamps to suit various styles of mounting. All these lamps are equipped with four No. 1 mantles, but are representative of a range of lanterns which may be fitted with from two to four mantles of either No. 1 or No. 2 size. All types of Cranford lamps are now available fitted with directional reflectors, and in the larger sizes Pilkington toughened glass is fitted. This year the makers are exhibiting a new model, which is a modified swan neck specially designed to give the correct mounting height on the longer columns which are now coming into use.

## Street Lighting in Eastbourne Area

Street lighting started at Eastbourne in 1852 with the introduction of gas lighting, consisting of flat flame burners, subsequently converted to Welsbach incandescent burners with mica chimneys. Later still came various experiments with different types of gas mantles. Electric lighting was introduced in 1882, and in 1918, when the total number of lamps in commission was 1,868, comprising 1,625 gas lamps and 243 electric, the lighting authority decided gradually to convert the gas lighting to electric; it was also decreed that all additional lighting should be electric. The conversion was completed by 1928.

While the Eastbourne Gas Company's street lighting activities are confined to areas outside the Borough of Eastbourne, the Company has given every assistance in laying on gas supplies in the exhibition hall for the use of manufacturers displaying gas exhibits, and in the official Handbook the Association expresses its indebtedness to Mr. C. J. B. Sawbridge, General Manager and Secretary, and Mr. H. Simmonds, District Manager, for their help and co-operation.

## EXPANSION AT SHEFFIELD

Extensions which it is hoped to make to the plant of Sheffield and District Gas Company are expected to cost an ultimate £2 mill. Some of the extensions to the carbonizing plant have already been authorized by the Ministry of Fuel and Power, but further work has yet to be agreed on.

Output for this year has already risen by 8.5% and would be far greater if the Company were able to supply the quantity of gas required by consumers. The potential demand for gas at Sheffield is illustrated by the request of two important industrial consumers alone for quantities of gas over the next five years or so amounting in each case to 6,000 mill. cu.ft. per annum—12,000 mill. cu.ft. in all.

The Ministry of Fuel and Power have also given consent to the request of Cudworth Gas Department for a supply of gas in bulk from the Sheffield Company. Negotiations have been completed and an agreement signed that a supply will be passed to Cudworth as soon as possible.

## Self-Propelled Crane

To meet the demand for more flexible handling of machinery in heavy industry, Steels Engineering Products, Ltd., Sunderland, have produced a 12½-ton Coles mobile crane, Model 90028, which is available for either petrol/electric or Diesel/electric operation.

The crane has four motions : hoisting, derricking, slewing and travelling, each being operated by separate electric motors controlled from the driver's seat on the revolving superstructure. Hoist, derrick and slewing motions are stopped by electro-magnetic brakes, thus making the machine extremely safe in operation. All crane motors have reversing switches which automatically reverse the steering gear when the driver faces rear of chassis. The controls are also fitted with all the latest safety devices, and radius indicator shows the maximum loads which can be lifted at various radii.

The superstructure can be revolved completly round the chassis in either direction. When handling heavy loads the chassis is jacked with outriggers to provide a fixed base, but with loads of 8½ tons and under the crane is fully mobile. With a standard 30 ft. jib and outriggers in position, the crane is designed for a maximum load lift of 12½ tons at 10 ft. radius. Proportionate lighter loads can be handled at longer radii up to a maximum of 29 ft., at which loads of 3½ tons can be lifted. With an 80 ft. jib and outriggers in position, ¾ ton can be comfortably handled at 70 ft. radius. Fully mobile (without outriggers) fitted with standard 30 ft. jib, loads can be varied from 8½ tons at 10 ft., to 2¼ tons at 25 ft. 9 in. radius.

Operational speeds on level ground are : hoisting, 10 tons at 15 ft. per minute down to 2 tons at 90 ft. per minute ; derricking; maximum to minimum radius in 90 seconds , travelling, up to 4 m.p.h. unloaded.

## " London " Lamps

London Bridge has had the same gas lamps for 46 years. Now, however, illumination is to be of the latest type, and 25 ft. mounting-height standards are being erected. They are designed to carry 10-mantle " London " lamps.

## Coventry Window

Our photograph shows a recent display featuring the multipoint water heater of Ewart & Son, Ltd. in the showroom window of the Coventry Gas Department.

## GAS UNDERTAKINGS' RESULTS

### Hawick Gas Company

Presiding at the annual meeting on Aug. 25, Mr. R. Scott-Noble, in submitting the annual report—providing once again for a dividend of 5%, free of tax—reviewed the history and industrial record of the Company, which was formed in 1830. For 100 years it took the form of a co-partnership and it was on the occasion of its centenary that the structure was changed to that of a limited liability company. While the investors looked for a reasonable return on their capital outlay, profits were not a first consideration; a good and inexpensive service was what they wanted for their fellow-townsmen and for themselves. This had been the keynote of the Company's policy during the subsequent years. They had developed a tar distillation business which had been of considerable service to the community at large and which was capable of still further development. They purchased crude tar from many other gas undertakings in the neighbourhood and this was processed to make road tar and creosote, both of which found a ready market. Last year's increase in gas sales had been maintained in spite of the mild winter, and the sales of appliances were the highest in the history of the Company. Gas prices were advanced slightly during the year, but there was unfortunately a considerable time lag between the application of the increased costs and the recovery of increased revenue from gas sales. It has, however, been found possible to set aside £4,508 for depreciation, and £1,050 for war damage claims. The carry-forward had been reduce by £725 to enable a dividend of 5%, tax free, to be paid.

### Leek Gas Department

The total quantity of gas distributed has again broken all previous records, the total for the year ended Mar. 31 being 196,597,000 cu.ft., an increase of 2,456,000 cu.ft. over the previous year. Mr. S. Tomlinson Jones, Engineer and Manager, points out in his report that the increase would have been even greater but for the contrast between the exceptionally severe winter of 1946-47 and the mild winter of 1947-48. Since 1940 domestic gas sales have increased from 97½ mill. cu.ft. to 146 mill. cu.ft., or approximately 50%. A record breaking turnover in sales of gas appliances is reported, the total value being £22,499, compared with £8,675 for the previous year, which in itself was a record. A hire-purchase scheme was re-introduced shortly before the commencement of the year and contributed £8,796 to the total. Revenue account income increased from £73,188 to £82,749, compared with £36,582 in 1939. Gross profit was £2,720 which after allowing for capital charges and income tax leaves a net loss of £5,363. This loss is chiefly attributable to non-recurring expenditure defrayed out of revenue account. In addition, capital expenditure totalling £9,128 was incurred during the year. The Engineer and Manager regards the prospects as excellent and says the works should be a worthy acquisition to the Area Gas Board under nationalization. There is scope for increased sales, and the plant is capable of meeting considerably increased demands with a minimum of capital outlay.

### Sudbury Gas and Coke Company

Final dividends making 6¼% on the Preference shares and 8½% on the Ordinary shares for the year ended June 30 were declared at the annual general meeting on Aug. 30. The report and accounts showed that the year's total make of gas was 101,244,000 cu.ft., of which 96,442,900 was accounted for, yielding an income of £31,946. The revenue balance carried to profit and loss account was £4,382, and the balance to be carried forward, subject to dividends, was £17,405, against £16,399 brought in. The report recorded with regret the death of two Directors during the year, Mr. R. H. Marten and Mr. P. S. Head. Reference was also made in the report to the fact that the 111th annual meeting might prove to be the last. It was recalled that the Company was inaugurated at a public meeting on Jan. 27, 1936, and that a circular issued in that year stated: " The Directors wish to render the supply of gas more an object of public benefit than of private emolument, and to act on a system of liberality to the consumer, and security to the shareholder."

## GAS STOCKS AND SHARES

Influenced by renewed hopefulness with regard to the Berlin situation, stock markets opened firmly last week, and Monday's transactions on the London Stock Exchange at 7,864 were the highest for a Monday since the 8,632 recorded on the last Monday in June. Gilt edged showed fresh strength under the lead of Transport 3% stock which finished the day at a new peak. Increased activity was noted among industrial securities, but there was little interest in gas and electricity stocks. By Tuesday, however, an air of uncertainty developed, partly due to reports of the military talks and the announcement with regard to winter power cuts, relieved to some extent by the tone of the Chancellor's references to profits and dividends in his speech at the Margate T.U.C. conference.

Deterioration of the Berlin situation and the defeat of the new Schuman Government in Paris led to a marking down of prices on Wednesday, and dealings fell to 6,284. Conditions continued dull on Thursday, when dealings fell to 5,837, compared with 6,371 for the previous Thursday. The *Financial Times* Government securities index fell to 112.85, as against 112.93 a week earlier, while the industrial ordinary share index dropped from 116.6 to 115.5.

There was rather more activity in gas stocks, with a total of 243 transactions for the week ended Thursday evening, compared with 221 and 207 for the two previous weeks. Prices generally remained above the compensation values. The only net changes on the week were as follows:

**OFFICIAL LIST**

| | | | |
|---|---|---|---|
| Alliance & Dublin, cons. ord. | 22/ | —24/ | + 1/6 |
| Imperial Continental Gas Assoc. | 112 | —117 | + 2 |